

Before the

ILLINOIS COMMERCE COMMISSION

In the Matter of Global NAPs Illinois, Inc.
Petition for Arbitration Pursuant to
Section 252(b) of the
Telecommunications Act of 1996 to
Establish an Interconnection Agreement
with Verizon North Inc. f/k/a GTE North
Incorporated and Verizon South Inc. f/k/a
GTE South Incorporated

Docket No. 02-0253

Direct Testimony

of

SCOTT C. LUNDQUIST

on behalf of

Global NAPs Illinois, Inc.

May 16, 2002

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While attempting to shut down CLEC competition in the market for dial-up ISP access services by prohibiting CLEC use of virtual NXX codes, Verizon-Illinois has, in some of its operating territories, itself created a single “500” number statewide local calling mechanism for use by its own ISP affiliate, Verizon-Illinois Online, under an arrangement that is not, as a practical matter, available to CLECs. 63

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From an economic and policy perspective, the appropriate intercarrier compensation for the termination and transport of ISP-bound local calls, as well as other forms of local traffic, is a symmetric rate based upon the ILEC’s prevailing TELRIC cost level, which creates incentives for continual reductions in the costs of call termination services and harms neither ILECs nor end users. 69

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1 INTRODUCTION

3 **Qualifications**

5 Q. Please state your name, position and business address.

7 A. My name is Scott C. Lundquist. I am Vice President of Economics and Technology, Inc.,
8 (“ETI”), Two Center Plaza, Suite 400, Boston, Massachusetts 02108. Economics and
9 Technology, Inc. is a research and consulting firm specializing in telecommunications
10 economics, regulation, management and public policy.

12 Q. Please summarize your educational background and previous experience in the field of
13 telecommunications regulation and policy.

15 A. I have prepared a Statement of Qualifications, which is attached hereto as Attachment 1.

17 Q. Have you previously testified before the Illinois Commerce Commission (“ICC or
18 Commission”)?

20 A. Yes, On December 28, 2001, I provided prefiled written testimony on behalf of Global
21 NAPs, Inc. in its recent arbitration with the Illinois Bell Telephone Company d/b/a
22 Ameritech Illinois, Illinois CC Docket No. 01-0786.

1 Q. Have you previously testified as an expert in other telecommunications regulatory
2 proceedings?

3
4 A. Yes. I have served as an expert witness on telecommunications matters before state public
5 utility commissions on numerous occasions since 1993, including appearances in Alabama,
6 California, Connecticut, Hawaii, Illinois, Maryland, Nevada, New Jersey, Ohio, Texas,
7 Washington state, and Wisconsin. Many of these cases have required that I analyze the
8 economics of local exchange carriers' (LECs') networks and services, relative to such issues
9 as the restructuring of access service tariffs, the development of cost-based rates for
10 unbundled network rate elements (UNEs), and the arbitration of interconnection agreements.

11
12 **Assignment**
13

14 Q. On whose behalf is this testimony being offered?

15
16 A. This testimony is offered on behalf of Global NAPs Illinois, Inc. ("Global NAPs").
17

18 Q. What was your assignment in this proceeding?

19
20 A. ETI has been engaged by Global NAPs to provide expert testimony addressing several of
21 the outstanding contested issues between Global NAPs and Verizon North Inc. (f/k/a GTE

1 North Incorporated) and Verizon South Inc. (f/k/a GTE South Incorporated) that have been
2 designated for arbitration.¹

3
4 Q. What specific issues are addressed by your testimony?

5
6 A. My testimony addresses the following specific issues:

- 7
- 8 • Whether any carrier should be required to install more than one point of interconnection
9 per LATA;
 - 10
 - 11 • Whether each carrier should be responsible for the costs associated with transporting
12 traffic to a single point of interconnection;
 - 13
 - 14 • Whether Global NAPs should be required to adopt the local calling area boundaries
15 currently defined by Verizon-Illinois;
 - 16
 - 17 • Whether Global NAPs should be able to assign NXX codes to its customers that are
18 “homed” to a central office switch outside of the customer’s local calling area
19 (sometimes referred to as “virtual” NXX assignments) in order to compete with
20 Verizon-Illinois’ Foreign Exchange (FX) services and the “500-number” arrangements
21 that Verizon makes available to its ISP affiliate Verizon Online; and
22

1. I will refer to Verizon North Inc. and Verizon South Inc. collectively as “Verizon-Illinois” in my testimony.

- The appropriate form of intercarrier compensation for locally-rated traffic exchanged between Global NAPs and Verizon-Illinois, including calls terminated to Internet Service Providers (ISPs).

Summary of Testimony

Q. Please briefly summarize your testimony on these issues.

A. The issues being arbitrated by the Commission raise fundamental concerns about the physical interconnection arrangements (number and location of points of interconnection) between ILECs and CLECs, and the use by CLECs of so-called “virtual” NXXs to provide foreign exchange (“FX”) service to their customers. Indeed, these issues go to the heart of the need to establish regulatory policies that are designed to flexibly promote and encourage competition — the vision of the 1996 federal *Telecommunications Act* — as opposed to policies whose purpose is to protect the monopoly position of the incumbent — the vision of the ILECs.

To understand the critical nature of these issues, it is important to recognize first that CLECs face a considerable challenge in devising a strategy to compete with the ILEC’s long-established serving arrangements, massive customer base, and ubiquitous network. At the same time, telecommunications technology has changed significantly since the ILEC’s basic network design and construction was established. Moreover, CLECs will typically not begin with a mix of customers that is in any way similar to the ILEC’s customer base, either in terms of service needs or customer location; to the contrary, most CLECs will likely find

1 that they can most easily gain a foothold in the market by serving one or more niches out of
2 the total market demand for telecommunications services. The CLEC, therefore, will face
3 different economic and market constraints on its network design than those faced by the
4 ILEC. It is inevitable that these different considerations will lead CLECs to deploy
5 networks that look very different from the ILEC's network — in terms of the number and
6 locations of switches and inter-switch facilities, the length and nature of customer loops, and
7 the types of services predominantly provided to their customers.

8
9 The Commission should encourage and accommodate these different CLEC strategies and
10 network topologies. It would be regulatory folly to think that any CLEC will, should, or
11 even could merely mimic or “clone” the ILEC's embedded network any time in the
12 foreseeable future, if ever. Indeed, if the ILEC was building its network on a clean slate, it
13 would probably not clone *itself*; instead, it would take advantage of new technology to build
14 a different network than it has today. For this reason, it is critically important to the
15 development of competition that regulators *not* make the mistake of assuming that the
16 ILEC's network architecture is somehow written in stone, or even optimal to the needs of
17 telecommunications consumers today. To the contrary, regulators should be alert to and
18 resist ILEC efforts to impose costs on their competitors by using regulatory policies
19 designed for other purposes to force CLECs to build facilities, or assume costs, that are not
20 germane to the CLECs' own competitive strategies.

21
22 These considerations lead to the following general conclusions, which are explained at
23 greater length in the body of this testimony:
24

- 1 • The party originating traffic is responsible for getting that traffic from wherever it
2 originates on its network to the other party's point of interconnection. The notion that
3 CLECs should have to "pick up" traffic from the ILEC at some point close to the
4 location where the traffic originates on the ILEC's network is simply an anticompetitive
5 effort to shift to CLECs costs that the ILEC should properly bear.
6
- 7 • Under the *Telecommunications Act* and the FCC's implementing rules, ILECs have no
8 right to demand interconnection at any particular point on a CLEC's network (although
9 they do have an obligation to interconnect). CLECs, however, have the express right to
10 establish interconnection "at any technically feasible point" on the ILEC's network.
11 These obligations are asymmetrical *on purpose*. This asymmetry is designed to offset,
12 in part, the inherent advantages of the ILEC's ubiquitous network and widely dispersed
13 customer base. For this reason, CLECs are permitted to establish networks where and
14 how they can, to deliver CLEC-bound traffic to the CLEC. CLECs also have, and
15 ILECs are required to provide, maximum flexibility to CLECs for delivery of ILEC-
16 bound traffic anywhere that is technically feasible (for the ILEC) and convenient (for
17 the CLEC).
18
- 19 • Modern telecommunications technology has essentially eliminated distance as a
20 significant driver of the costs ILECs face for carrying telephone calls. Basing charges
21 on the distance a call is carried is a legacy of the era of legally sanctioned telephone
22 monopolies, but it would not be viable in a fully-competitive local exchange market
23 should not be permitted to drive intercarrier compensation between competing LECs.
24 From a forward-looking economic costing perspective – which the Supreme Court

1 recently affirmed as consonant with the *Telecommunications Act* – Verizon-Illinois
2 would incur *de minimis* additional costs to transport Global NAPs-destined calls beyond
3 their local calling area boundaries. Therefore, it should not be permitted to subject
4 Global NAPs to payments for such transport that would be orders of magnitude higher
5 than those costs.

- 6
- 7 • In part because distance has become irrelevant as a cost driver, the “location” to which
8 particular NXX codes are “assigned” should not matter for any significant inter-carrier
9 purpose. The patchwork quilt of “rate centers” and “local calling areas” that the ILECs
10 have created over the last hundred years bears no relationship to the technological or
11 competitive realities of today. As a result, regulators should place no restrictions on
12 which telephone numbers carriers can assign to their customers; to the contrary,
13 regulators should establish a regime in which carriers are permitted maximum
14 competitive flexibility with respect to the creation and marketing of both “inward” and
15 “outward” local calling areas.
 - 16
 - 17 • Verizon-Illinois should not be allowed to prohibit Global NAPs from offering FX
18 services to its customers using “virtual” NXX arrangements, given that their costs are
19 unaffected by that practice and that Verizon has been widely deploying a toll-free “500-
20 number” service available to its Verizon Online affiliate and other ISPs that would
21 compete directly with the type of service GNAPs wishes to be able to offer in Illinois.
- 22

23 The final section of my testimony addresses the issue of intercarrier compensation for
24 locally-rated traffic exchanged between Global NAPs and Verizon-Illinois. I review the

1 history of the FCC's efforts to impose a distinction for intercarrier compensation purposes
2 between ISP-bound calls and other locally-rated traffic, and describe the rules set forth in
3 the FCC's *ISP Remand Order* which presumably govern intercarrier compensation in this
4 instance. I note that the recent ruling by the U.S. Court of Appeals for the D.C. Circuit,
5 which remanded that order back to the FCC but did not vacate it, has only extended the
6 uncertainty surrounding the ultimate disposition of those issues. I recommend that, in the
7 event that the Commission determines that the specific intercarrier compensation rules set
8 forth in the FCC's *ISP Remand Order* do not apply to locally-rated traffic exchanged
9 between Global NAPs and Verizon-Illinois (*e.g.*, as a result of a future appellate court ruling
10 to reverse, vacate, or stay the *ISP Remand Order*), the Commission should apply a
11 symmetric, TELRIC-based reciprocal compensation rate to all such traffic, including ISP-
12 bound calls.

POINT OF INTERCONNECTION AND VIRTUAL FX ISSUES

ILECs such as Verizon-Illinois continue to reflect their long history as franchise monopoly service providers in the scale and ubiquity of their local exchange networks, whereas CLECs tend to design their networks to more closely accommodate current and anticipated demand in an evolutionary, flexible manner.

Q. Are there major differences between the architectural features of ILEC and CLEC networks?

A. Yes. Local telephone networks are comprised of three principal components:

- *Subscriber loops* — dedicated facilities interconnecting the local exchange carrier wire center with the subscriber's premises and/or equipment;
- *End office switches* — the switching systems at which individual subscriber loops terminate and which interconnect subscribers with each other and with interoffice and interexchange network facilities; and
- *Interoffice network* — trunking and switching facilities that provide interconnections among end offices and between end offices and other telecommunications carriers.

The principal architectural differences between ILEC and CLEC networks arise largely in the relative *mix* of these various network components.

Q. Please explain.

1 A. ILEC networks have been built up over more than a century and generally consist of a large
2 number of end offices that are physically located in relatively close geographic proximity to
3 the subscribers they directly serve. For example, Verizon-Illinois currently operates a total
4 of 496 central office switches in its Illinois service areas, that terminate the approximately
5 862,000 switched access lines (subscriber loops) served by the Company.² When a call
6 involves customers served by different end offices (for example, customers located in
7 different communities), completion of the call requires that it be routed between the two end
8 offices over an interoffice trunk. In order to avoid deploying dedicated interoffice trunks
9 between every possible pair of ILEC end offices, in most cases individual end offices are
10 connected (via interoffice trunks) to an intermediate switching point known as a “tandem”
11 office. The tandem switch (sometimes referred to as a “Class 4” switch in the traditional
12 North American network hierarchy) can then interconnect any of the individual end offices
13 to which it is directly trunked. Where the end offices involved in a particular call are
14 trunked to (subtend) *different* tandem switches, the call is completed via an interoffice trunk
15 between the two tandems. In certain situations in which particularly high volumes of traffic
16 exist within pairs of end offices, direct interoffice trunks may be used to connect the two
17 end office switches involved.

18
19 Q. Why might a CLEC network not be designed the same way?
20

2. Federal Communications Commission, ARMIS Report 43-08 (Table II. Switched Access Lines by Technology), for year 2001, accessed 04/23/02. According to that report, Verizon-Illinois (Verizon North, Inc. and Verizon South, Inc.) had 861,826 switched access lines in service and 496 central office switches (including 404 remote switches) as of year end 2001.

1 A. The differences between ILEC and CLEC network architectures are best explained in terms
2 of the relative economics of switching vs. transport.

3
4 Q. Are switching and transport economic substitutes for one another?

5
6 A. In some cases, yes. One way of looking at the principal network components identified
7 above is in terms of the primary functions of switching and transport. Subscriber loops
8 support a transport function, carrying traffic between the customer's premises and the
9 serving wire center; interoffice trunks also provide a transport function, carrying traffic from
10 one switch to another. Switching and transport facilities are often economic substitutes for
11 one another; for example, as I described above, by introducing a tandem switch to
12 interconnect a number of individual end offices, one avoids the need to deploy direct
13 interoffice trunks between every possible pair of end offices on the ILEC's network.
14 Similarly, by deploying end office switching facilities in close geographic proximity to the
15 individual subscriber, it is possible to concentrate traffic on a smaller complement of
16 transport facilities than would be possible if, for example, individual switches are used to
17 serve subscribers located across a large geographic area.

18
19 The specific mix of switching vs. transport facilities in a network thus depends heavily upon
20 the relative cost of each and the overall scale of operations of the network. ILECs such as
21 Verizon-Illinois generally serve a million or more individual subscribers statewide and can
22 thus afford to deploy relatively efficient, large-scale switching systems in close geographic
23 proximity to their customers. In contrast, CLECs typically serve a customer population that
24 is a minute fraction of the size of the ILEC's customer base. In order to achieve switching

1 efficiencies, CLECs often deploy a relatively small number of switches, so their customers'
2 traffic must be transported over relatively large distances.

3
4 This switching vs. transport trade-off has always been present in telecom network design:
5 you can generally reduce switching costs by concentrating demand in a small number of
6 large switches, but by so doing you increase the transport capacity that is required to
7 connect the switches to customers over greater distances. In recent years, however, the
8 scales have been tipped — *shoved* would probably be a better word — decidedly in the
9 direction of substituting transport for switching.

10
11 As a general matter, the costs of transport have been dropping at an enormous rate in recent
12 years. This point is highlighted in an article appearing in the January 2001 issue of
13 *Scientific American*, “The Triumph of the Light” by Gary Stix. I have reproduced this
14 article as Attachment 2 to my testimony. The article reports that “the number of bits a
15 second (a measure of fiber performance) doubles every nine months for every dollar spent
16 on the technology.” In other words, the cost per unit of transport is cut by 50% *every nine*
17 *months*. Put another way, over the past five years, the cost per unit of telecommunications
18 transport has fallen by more than 98%! Transport costs have become far less distance-
19 sensitive and, with the use of high-capacity fiber optics, massive amounts of capacity can be
20 deployed at little more than the cost of more conventional transport capacity sizes.

21
22 One effect of this economic trend has been that ILECs have been consolidating multiple
23 switches into large main frame/remote configurations. In the case of CLECs, the

1 substantially smaller scale of their customer base and traffic load makes any other approach
2 infeasible as an economic matter.

3
4 Q. How might a typical CLEC network be designed?

5
6 A. Some CLECs will use Unbundled Network Element (UNE) loops leased from ILECs, along
7 with CLEC-owned subscriber loop facilities, and collect these loops at centralized locations
8 in each community in which the CLEC offers service. At these collection points, the traffic
9 is concentrated onto high-capacity transport facilities (that may be leased from the ILEC or
10 from other carriers or owned by the CLEC itself) for the sometimes long trip to the CLEC
11 switch. There are several different types of concentration arrangements that may be used,
12 depending upon the aggregate amount of traffic that is involved. For relatively low-volume
13 situations, passive multiplexing of the individual subscriber loops onto specific dedicated
14 channels in the high-capacity “pipe” may be most efficient; in other cases, small stand-alone
15 switches or Remote Service Units (RSUs) subtending the distant Host Switch may be
16 deployed. Where the CLEC’s customers are concentrated within a small, relatively
17 confined area (*e.g.*, within a shopping mall), a small PBX-like switch may be used to
18 interconnect individual end users with a common pool of facilities for the trip to the CLEC
19 central office switch.

20
21 Other CLECs adopt different strategies, depending on the type of customers they serve and
22 the needs of those customers. For example, while some businesses (*e.g.*, a dry cleaners or a
23 movie theater) have a specific geographic location that is significant to their business
24 operations, others (*e.g.*, taxicab dispatch services, ticket agencies, answering services,

1 unified message service providers, Internet service providers) do not. Customers of this
2 latter sort — particularly in times of expansion — may be willing to locate some or all of
3 their telecommunications-related gear at or near the CLEC’s location, if such an
4 arrangement offers other benefits. To accommodate such customers requires the CLEC to
5 obtain more space in its own central offices than it needs for its own operations, in order to
6 accommodate customers’ collocated equipment. This arrangement amounts to an economic
7 trade-off of the costs of real estate and office space (which the CLEC recovers through
8 charges to its customers for (short) loops and for collocation space) for the costs of loop
9 plant to a distant customer location (which the CLEC would recover purely through loop
10 charges). A CLEC pursuing this strategy would have switching resources and collocation
11 space, as well as interconnection facilities between the CLEC and the ILEC; such a CLEC
12 will have few if any “loops” — at least if a “loop” is construed to require outside plant.

13
14 Other CLEC strategies, involving still other mixes of telecommunications network
15 investments and other investments, are also possible. The point of the 1996 Act is to create
16 an environment where the arrangements a particular carrier deploys are driven by
17 economics, ingenuity and customer demand, as opposed to obsolete regulatory categories
18 and assumptions. In particular, CLECs should not be forced to replicate or emulate legacy
19 ILEC network multi-switch architectures by, for example, being forced to construct (or
20 otherwise acquire the use of) dedicated facilities between the CLEC’s switch and multiple
21 ILEC switches.

22
23 Q. Would adoption of Verizon-Illinois’s position concerning the location of POIs and
24 responsibility for transport have such an undesirable effect?

1 A. Yes, that is my understanding. While I have not been directly involved in the negotiations
2 between Verizon-Illinois and Global NAPs, I have reviewed Global NAPs' Petition for
3 arbitration,³ and discussed the companies' positions with Global NAPs' counsel for those
4 negotiations.

5
6 Q. Please outline Verizon-Illinois's position as you understand it.

7
8 A. It appears that Verizon-Illinois's position is that Global NAPs must establish multiple POIs
9 in a LATA — specifically, one per local calling area — to exchange traffic between the two
10 carriers.⁴ Moreover, Verizon-Illinois maintains that if Global NAPs is not willing to
11 establish multiple POIs, then it must pay the additional costs relating to Verizon-Illinois's
12 transport of originating traffic to a single POI.⁵ Under the conditions required by Verizon-
13 Illinois, Global NAPs would be compelled either to place multiple POIs in each LATA, or
14 to incur transport costs as if it had. The effect is the same in either case: to impose costs on
15 Global NAPs which undermine the federally-granted right of CLECs to interconnect at no
16 more than a single POI per LATA.

3. *In the Matter of Global NAPs Illinois, Inc. Petition for Arbitration Pursuant to Section 252(b) of the Telecommunications Act of 1996 to Establish an Interconnection Agreement with Verizon-North Inc. f/k/a GTE North Incorporated and Verizon-South Inc. f/k/a GTE South Incorporated*, Illinois Commerce Commission Docket No. 02-0253, Global NAPs Petition for Arbitration, April 10, 2002 ("Global NAPs Petition").

4. Global NAPs Petition, at pages 11 and 14.

5. *Id.*

1 **The differences between ILEC and CLEC network architectures, as well as the**
2 **substantially smaller scale of CLEC operations, are key sources of cost differences between**
3 **the two types of carriers.**
4

5 Q. Is it reasonable to expect that a CLEC's costs will differ, with respect to both level and
6 structure, from the cost conditions confronting an ILEC?
7

8 A. Indeed, yes. There are in fact two principal sources of cost variation between a CLEC and
9 an ILEC with respect to the provision of local exchange service and, in particular, the costs
10 of transporting and terminating local calls: *scale* and *facilities mix*. I address each in turn.
11

12 *Scale.* The overall cost of constructing and operating a telecommunications network is
13 heavily affected by the overall volume of traffic and number of individual subscribers that
14 the network is designed to serve; that is, telecom networks are characterized by substantial
15 *economics of scale and scope*. As I observed earlier in my testimony, CLECs generally
16 serve a far smaller customer population and carry far less traffic than do ILECs. Because
17 they are necessarily forced to operate at a far smaller scale, CLEC networks may exhibit
18 higher average costs than ILEC networks.
19

20 Q. Are there other ways in which a CLEC's relatively small scale of operations may affect the
21 level of its costs?
22

23 A. Yes. The effects of these scale and scope economics are further compounded by the fact
24 that ILECs are able to purchase switching, transport and other network components at a far
25 more favorable price than their much smaller CLEC rivals. For example, testimony offered

1 by Bell Atlantic/GTE in the 1998 FCC proceeding to consider the Joint Application of Bell
2 Atlantic and GTE for approval of their merger indicated that following the merger the
3 companies' costs of equipment purchases would decrease substantially due to the increased
4 purchasing power of the newly formed company, Verizon-Illinois, relative to that of a stand
5 alone GTE. Specifically, the Declaration of Doreen Toben, Vice President and Controller of
6 Bell Atlantic Corporation stated that the "merger of Bell Atlantic and GTE will produce
7 substantial cost savings and revenue improvements that are hard, real, and certain."⁶
8 According to Ms. Toben, Bell Atlantic had exceeded its projected savings and revenue
9 enhancement resulting from its merger with NYNEX: "The very substantial cost savings
10 estimated at the time of the Bell Atlantic-NYNEX merger were subsequently increased and
11 the increased targets are being achieved."⁷

12
13 Of course, even Verizon-Illinois standing alone, without reference to its parent company,
14 has some 861,826 total switched access lines in Illinois, and is much larger than any CLEC.⁸
15 Accordingly, it is entirely reasonable to expect that, without the volume discounts available
16 to an ILEC such as Verizon-Illinois, a CLEC will experience higher capital-related costs. A
17 CLEC's capital-related costs will also tend to exceed the corresponding ILEC items due to

6. *In the Matter of GTE Corporation, Transferor, and Bell Atlantic Corporation, Transferee For Consent to Transfer of Control*, Declaration of Doreen Toben, September 30, 1998, at para. 2.

7. *Id.*, at para. 7.

8. Federal Communications Commission, ARMIS Report 43-08 (Table III. Access Lines in Service by Customer), for year 2001, accessed 05/03/02. According to that report, Verizon-Illinois (Verizon North, Inc. and Verizon South, Inc.) had 376,203 business and residential access lines in service as of year end 2001.

1 the substantially greater level of risk that investors ascribe to CLECs. CLECs can thus
2 expect to confront higher costs of debt and equity capital as well as the need to recover their
3 capital investments over a somewhat shorter period of time than would be required for an
4 ILEC with more stable and predictable demand.

5
6 *Facilities Mix.* All else being equal, a CLEC's network will typically consist of relatively
7 less switching and relatively more transport or transport substitutes than would an ILEC
8 network. While switching costs are sensitive both to the number of call set-ups as well as to
9 aggregate call duration, transport costs tend to vary primarily with duration. Accordingly, it
10 is reasonable to expect that CLEC local usage costs will exhibit proportionately greater
11 duration-sensitivity and proportionately less set-up sensitivity than do ILEC usage costs.

12
13 Q. Is a LEC's choice of network architectures influenced by the level of traffic volumes that it
14 serves or anticipates serving?

15
16 A. Yes, of course. The network design choices of the CLECs are particularly sensitive to
17 anticipated demand conditions. To understand this, we must first consider the factors that
18 drove the development of the ILEC networks. The design of the ILECs' contemporary
19 networks generally reflects their traditional role as monopoly service providers serving all
20 potential telephone service subscribers within their assigned operating areas. Under those
21 conditions, the efficient network design tended to require an essentially ubiquitous
22 deployment of distribution facilities, including distribution cables placed down virtually
23 every street and extending to every business office park, high-rise building, and the like —
24 whereupon traffic from those facilities was aggregated into higher-capacity feeder cables

1 and transported back to a relatively high number of local, end-office switches and (other
2 than intra-switch calls) was switched onto the interoffice transmission network for the
3 transport of each call to its intended destination. Because ILECs still serve close to 100% of
4 the local service market, there is in each community sufficient demand to support at least
5 one, and often several, central office switches or “remote service units” (“RSUs”).
6 Consequently, the geographic areas served by individual central office switches (or wire
7 centers, in cases where switches for several “exchanges” have been consolidated) tend to be
8 relatively small and the lengths of subscriber loops connecting the wire center with the
9 customer’s premises tend to be relatively short.

10
11 In contrast, a typical CLEC serves only a small fraction of the total customer base in any
12 single community. Because the demand is so much smaller than for ILEC services, it would
13 be extremely inefficient and costly for a CLEC to deploy a switch or even an RSU in each
14 local community it wishes to serve. Instead, a CLEC will typically use one switch to serve
15 all of its customers for a broad geographic area. A CLEC will design its network to
16 accommodate the actual locations of its customers (including customers for whom location
17 is variable, and might collocate with the CLEC) and their actual demand characteristics
18 under an architecture that can be expanded in a flexible manner as demand for the CLEC’s
19 services grows.

20
21 Q. How do these different CLEC network architectures affect the issues in this proceeding?

22
23 A. Because Global NAPs will deploy a very different network architecture to meet the needs of
24 its customers than that used by Verizon-Illinois, regulators must avoid the tendency to

1 assume that there is something automatic, appropriate, or “natural” about the ILEC’s
2 network design, or that there is anything automatic, appropriate, or “natural” about requiring
3 CLECs to conform their operations to that design, whether for purposes of interconnection
4 points or otherwise. There is nothing automatically natural or appropriate about the ILEC’s
5 network design. It is essentially an accident of history in any given case. Indeed, as will be
6 seen, the very different CLEC network architectures highlight the arbitrary (and obsolete)
7 nature of ILEC “local calling” areas, whether for incoming or outgoing calls. In other
8 words, the interconnection issues to be arbitrated by the Commission in this proceeding are
9 directly affected by the fact that CLECs can, should, and do use very different network
10 architectures than that used by the ILEC.

11
12 **A CLEC is not required to establish more than one Point of Interconnection in any LATA**
13 **in order to obtain LATA-wide coverage via that interconnection arrangement; and is not**
14 **financially responsible for transport costs outside of the ILEC’s local calling area.**
15

16 Q. Mr. Lundquist, are ILECs such as Ameritech-IL bound by any specific statutory or
17 regulatory obligations relative to the issue of establishing Points of Interconnection (POIs)
18 for the exchange of traffic with a CLEC’s network?

19
20 A. Yes, I believe that they are. While I am not an attorney and am not offering a legal opinion,
21 from a policy standpoint it is clear to me that the FCC’s implementation of the inter-
22 connection requirements of the *Telecommunications Act* defines the basic framework within
23 which the Commission should consider the question of points of interconnection and the
24 costs of delivering traffic to them. The issue of the local carrier’s responsibility for traffic
25 that it originates has to be analyzed in the context of the obligations borne by two

1 interconnected local carriers, which largely has been spelled out in the *Telecommunications*
2 *Act* and the FCC's implementation of its local interconnection provisions.

3
4 When considering these issues, the Commission should not lose sight of the overriding
5 purpose of the *Act*, which is to encourage competition in the local exchange market. That
6 purpose would be frustrated if the ILEC could directly or indirectly force CLECs to incur
7 costs to, in effect, duplicate the ILEC's ubiquitous embedded network. This anticompetitive
8 result, however, is exactly what would occur if CLECs were forced to pick up traffic from
9 the ILECs in multiple locations. As I shall explain in more detail later in my testimony, it
10 would also amount to the same thing, and have equally anticompetitive consequences, if the
11 ILEC was able to shift financial responsibility to the CLEC for some or all of the transport
12 costs that the ILEC incurs in delivering traffic originated by its customers to the POI.

13
14 A key point to understand is that, while primarily intended to promote competition, the
15 interconnection requirements adopted in the *Telecommunications Act* and developed in the
16 FCC's *Interconnection Order* do not require or provide for symmetric treatment of ILECs
17 and CLECs. Section 251(c)(2) of the *Act* obligates ILECs to interconnect with CLECs *at*
18 *any technically feasible point on the ILEC's network* "(A) for the transmission and routing
19 of telephone exchange service and exchange access; (B) at any technically feasible point
20 within the carrier's network; (C) that is at least equal in quality to that provided by the local
21 exchange carrier to itself or to any subsidiary, affiliate, or any other party to which the
22 carrier provides interconnection; and (D) on rates, terms, and conditions that are just,
23 reasonable, and nondiscriminatory...." In contrast, Section 251(a)(1) confers upon all
24 telecommunications carriers the duty "to interconnect directly or indirectly with the

1 facilities and equipment of other telecommunications carriers” but contains none of the
2 specifics that Section 251(c) applies to *incumbent* LECs.

3
4 In sum, ILECs have no right to demand interconnection at any particular point on a CLEC’s
5 network (although they do have an obligation to interconnect). CLECs, however, have the
6 express right to establish interconnection “at any technically feasible point” on the ILEC’s
7 network. These obligations are asymmetrical *on purpose*. This asymmetry is designed to
8 offset, in part, the inherent advantages of the ILEC’s ubiquitous network and widely
9 dispersed customer base. For this reason, CLECs are permitted to establish networks where
10 and how they can, to deliver CLEC-bound traffic to the CLEC.

11
12 Q. Do the specific interconnection rules established by the FCC adhere to the principle that
13 ILECs and CLECs have distinctly different interconnection obligations, with greater
14 flexibility afforded to CLECs?

15
16 A. Yes. In its seminal August 8, 1996 *Local Competition Order* which set forth the federal
17 rules for local carrier interconnection, the FCC explained that:

18 The interconnection obligation of section 251(c)(2), discussed in this section,
19 allows *competing carriers to choose* the most efficient points at which to
20 exchange traffic with incumbent LECs, thereby lowering *the competing*
21 *carriers’* costs of, among other things, transport and termination of traffic.⁹
22

9. *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, rel. August 8, 1996, 11 FCC Rcd 15499, 15588 (emphasis supplied) (*Local Competition Order*), aff’d in part and vacated in part sub nom., *Competitive Telecommunications Ass’n v. FCC*, 117 F.3d 1068 (8th Cir. 1997) and *Iowa Utils. Bd. v. FCC*, 120 F.3d 753 (8th Cir. 1997), (continued...)

1 The FCC identified the *Act* as the source of these differing obligations.¹⁰ The FCC Rules
2 thus *obligate* each ILEC to allow such interconnection by a CLEC at *any* technically
3 feasible point that is designated by the CLEC.¹¹ Moreover, FCC regulations do not grant the
4 ILEC the right to designate the point at which the other party must “pick up” the ILEC’s
5 traffic.

6
7 Q. Is there any prohibition against ILECs determining technically feasible interconnection
8 points and imposing those determinations upon interconnecting CLECs?

9
10 A. I am not aware of any provision of the *Act* that says, in so many words, “ILECs may not
11 designate the locations at which CLECs must interconnect.” But that is the only rational
12 way to understand what the statute says and what the FCC says about it. As noted above,
13 the interconnection obligations of LECs and ILECs are specifically identified in the *Act*, and
14 ILECs’ obligations are different and more extensive than those of CLECs. An ILEC may
15 not assume some authority that is not provided for in the *Act*.

16
17 Q. Can you cite any specific actions taken by the FCC that support your interpretation of the
18 *Act* with respect to this issue?

19

(...continued)

aff’d in part and remanded, *AT&T v. Iowa Utils. Bd.*, 119 S. Ct. 721 (1999).

10. *Id.*, at para. 220.

11. Rule 51.305(a)(2).

1 A. Yes. First, the FCC promulgated Rule 51.223(a), which specifically forbids states from
2 imposing upon CLECs the obligations that Section 251(c) imposes upon ILECs. Section
3 251(c)(2) requires ILECs to allow interconnection at any technically feasible point on their
4 networks. Rule 51.223(a) indicates that ILECs have no similar right to dictate where they
5 will interconnect with CLECs' networks. In fact, the FCC reiterated its reasoning in
6 connection with an interconnection dispute in Oregon, where the FCC intervened and urged
7 the court to reject US West's argument that the *Act* requires competing carriers to
8 interconnect in the same local exchange in which it provides local service. The FCC
9 explained:

10
11 Nothing in the 1996 Act or binding FCC regulations require a new entrant to
12 interconnect at multiple locations within a single LATA. Indeed, *such a*
13 *requirement could be so costly to new entrants that it would thwart the Act's*
14 *fundamental goal of opening local markets to competition.*¹²
15

16 More recently, in its order on SBC's Section 271 application for Texas, the FCC made clear
17 its view that under the *Telecommunication Act*, CLECs have the right to designate the most
18 efficient point *from the CLEC's perspective* at which to exchange traffic. As the FCC
19 explained:

20
21 New entrants may select the most efficient points at which to exchange traffic
22 with incumbent LECs, thereby lowering the competing carriers' cost of,
23 among other things, transport and termination.¹³

12. Memorandum of the FCC as Amicus Curiae at 20-21, *US West Communications Inc. v. AT&T Communications of the Pacific Northwest, Inc.*, (D. Or. 1998) (No. CV 97-1575- JE), emphasis supplied.

13. Memorandum Report and Order, *Application of SBC Communications Inc., Southwestern Bell Telephone Company and Southwestern Bell Communications Services, Inc.*
(continued...)

1 The FCC was very specific:

2
3 Section 251, and our implementing rules, require an incumbent LEC to allow a
4 competitive LEC to interconnect at any technically feasible point. *This means*
5 *that a competitive LEC has the option to interconnect at only one technically*
6 *feasible point in each LATA.*¹⁴
7

8 Furthermore, the FCC confirmed this understanding in the *Intercarrier Compensation*
9 *NPRM* it issued in April 2001.¹⁵ At paragraph 72 of that *NPRM*, the FCC stated that “under
10 our current rules, interconnecting CLECs are obligated to provide one POI per LATA.”¹⁶
11

12 All of this supports the conclusion that CLECs are *entitled* to designate one and only one
13 location at any technically feasible point within a LATA as their POI for that LATA, and the
14 ILEC is *required* to transport traffic to be interchanged with the CLEC between the ILEC’s
15 end office switches and that POI, with the CLEC assuming the obligation to transport the
16 traffic between the POI and the CLEC’s end office switches. Nowhere is there any
17 provision, either in the statute or in FCC rules, that would permit an ILEC to force
18 interconnecting CLECs to establish a POI within each ILEC local calling area or to limit the
19 ILEC’s obligations with respect to reciprocal compensation to only those situations in which

(...continued)

d/b/a Southwestern Bell Long Distance, Pursuant to Section 271 of the Telecommunications Act of 1996 To Provide In-Region InterLATA Services in Texas, CC Docket No. 00-65 at para. 78 (June 30, 2000).

14. *Id.*, at para. 78.

15. *See In the Matter of Developing a Unified Intercarrier Compensation Regime, Notice of Proposed Rulemaking*, CC Docket No. 01-92, FCC 01-132 (rel. Apr. 27, 2001) (“*Intercarrier Compensation NPRM*”).

16. *Id.*, at para. 72, citation omitted.

1 the POI is physically located within the ILEC local calling area associated with the ILEC
2 customer who originated the call or to whom the call is to be terminated.

3
4 And as I shall explain, the respective transport obligations of the ILEC and the CLEC on
5 either side of their POI must encompass *financial* responsibility for the associated costs of
6 their transport as well as the physical transport activity itself.

7
8 **The transport obligations of the ILEC and the CLEC must encompass the financial**
9 **responsibility for the costs of transporting their originating traffic to their respective sides**
10 **of the point of interconnection.**
11

12 Q. Does the FCC's policy relative to the single POI also speak to the issue of the responsibility
13 for the costs relative to transport to the POI?

14
15 A. Yes, it does. In this regard — and, again, I am not a lawyer — I would direct the
16 Commission's attention to the FCC's discussion of inter-network transport costs in
17 paragraph 1062 of the August 1996 *Local Competition Order*. In that discussion, the FCC is
18 addressing how carriers should split the cost of facilities used to link their two networks, and
19 the FCC makes quite clear that the originating carrier is responsible for the cost of getting its
20 outbound traffic to the interconnecting carrier. Specifically:

21
22 if the providing carrier provides one-way trunks that the interconnecting
23 carrier uses exclusively for sending terminating traffic to the providing carrier,
24 then the interconnecting carrier is to pay the providing carrier a rate that
25 recovers the full forward-looking economic cost of those trunks. The
26 interconnecting carrier, however, *should not be required to pay the providing*
27 *carrier for one-way trunks in the opposite direction, which the providing*
28 *carrier owns and uses to send its own traffic to the interconnecting carrier . . .*
29 Carriers operating under arrangements which do not comport with the

1 principles we have set forth above, shall be entitled to convert such
2 arrangements so that each carrier is only paying for the transport of traffic it
3 originates, as of the effective date of this order.¹⁷
4

5 The clear intent of this directive is that each interconnecting carrier should be “only paying
6 for the transport of traffic it originates,” and not for the transport that the other carrier must
7 undertake to bring its outbound traffic to the POI.
8

9 Most recently, the FCC reiterated this conclusion, observing in paragraph 70 of its
10 *Intercarrier Compensation NPRM* that its current rules require that “the originating
11 telecommunications carrier bear the costs of transporting traffic to its point of
12 interconnection with the terminating carrier.”¹⁸
13

14 Q. Are you aware of any recent decisions by other state regulatory commissions that adopted
15 this principle?
16

17 A. Yes, I am. In a Generic proceeding addressing interconnection issues in Georgia, the
18 Georgia Public Service Commission found that BellSouth was responsible for transporting
19 its traffic to the CLEC’s single POI.¹⁹ The Commission reasoned that because the CLEC
20 also must bear the cost of transporting its originating traffic to the POI, the ILEC was not
21 being placed at a disadvantage, and that the requirement that the ILEC bear the costs of

17. *Local Competition Order*, at para. 1062, emphasis supplied.

18. *Intercarrier Compensation NPRM*, at para. 70.

19. *Generic Proceeding on Point of Interconnection and Virtual FX Issues*, Georgia PSC
Docket No. 13542-U, Final Order, July 23, 2001, at 8.

1 transporting its originating traffic was “symmetrical, fair and consistent with the Federal
2 Act’s intent to promote competition.”²⁰ The Georgia Public Service Commission’s decision
3 explicitly contemplated the fact that the CLEC’s choice of a single POI as opposed to
4 multiple POIs would increase transport costs:

5
6 Assuming a CLEC’s choice to interconnect at a single point in the LATA
7 resulted in greater transport costs than if the CLEC established a POI in each
8 local calling area within the LATA, it still does not lead to the conclusion that
9 the CLEC should bear the cost of transporting the traffic to the POI. To draw
10 such a conclusion would be to argue that a CLEC should pay a price for taking
11 advantage of its right under the Federal Act as construed by the FCC. Stated
12 in the converse, it is to argue that an ILEC should receive additional
13 compensation for meeting its duty under the Federal Act.²¹
14

15 Requiring the terminating carrier to pay for transport that is beyond the originating caller’s
16 local calling area, but nevertheless on the originating carrier’s side of the POI, violates the
17 established interconnection obligations, and must be rejected.

18
19 Q. What is your recommendation to the Commission?
20

21 A. I recommend that the Commission should reject Verizon-Illinois’s position that Global
22 NAPs should bear the costs of any transport beyond the Verizon-Illinois-defined local
23 calling areas that may be required to deliver the Company’s outbound traffic to a single POI
24 designated by Global NAPs. Accepting Verizon-Illinois’s position on this issue would have
25 the effect of shifting its financial responsibility for originating transport to Global NAPs,

20. *Id.*

21. *Id.*, at 7.

1 contrary to the pro-competitive intent of the *Act* and the *Act's* interconnection principles that
2 the FCC has implemented in the federal rules governing interconnection of local carriers.

3
4 **The incremental costs that Verizon-Illinois would incur to transport calls to a single POI**
5 **within a LATA would be *de minimis*.**
6

7 Q. Does an ILEC such as Verizon-Illinois typically incur transport costs for calls that it
8 originates and terminates within the same local calling area?

9
10 A. Yes. Local calling areas generally consist of a number of individual exchanges and in some
11 cases multiple central offices within individual exchanges. When an ILEC carries a local
12 call on an end-to-end basis (*i.e.*, without a hand-off to another carrier), it typically must
13 transport that call from the originating end office to the terminating end office, over
14 interoffice facilities.²² For example, in the Forrest LATA (LATA Number 366), a local call
15 from the Heyworth exchange to the Bloomington exchange would require transport by
16 Verizon-Illinois of about 11.5 miles between the two serving end offices.²³ Exactly the
17 same principle applies where Global NAPs is provided with a single POI for LATA-wide
18 access and Verizon-Illinois must transport calls to that POI — the only difference being the
19 average *distance* over which the Verizon-Illinois transport would occur.

20
21 Q. If the Commission were to adopt Global NAPs' position and require Verizon-Illinois to
22 transport calls to a single POI in each LATA, would Verizon-Illinois incur significantly

22. The only exception is when the call is an entirely *intraoffice* call, *e.g.*, a call placed to a neighbor down the street.

23. See Table 1 of Attachment 3 to my testimony.

1 increased transport costs because of the additional distance those calls would be
2 transported?

3
4 A. No, it would not. In fact, as I shall demonstrate below, the incremental costs that Verizon-
5 Illinois would incur to extend transport beyond the local calling area to a single POI in each
6 LATA are *de minimis*, in large part reflecting the drastic reductions in unit costs for
7 transport that advances in fiber optic transmission technology have produced.

8
9 Q. Can you describe how Verizon-Illinois would transport outbound calls from its end users to
10 Global NAPs, if Global NAPs were to establish a POI within each local calling area?

11
12 A. Yes. In order to provide this “local calling area transport,” Verizon-Illinois would utilize
13 interoffice trunks, tandem switching and various other network facilities. Where there is a
14 relatively high volume of traffic from a particular Verizon-Illinois end office to the Global
15 NAPs POI (typically at the DS-1 level or above), a “direct end office trunk” (“DEOT”)
16 would be established between that end office and the POI. The DEOT is typically “derived”
17 from a larger transport facility (*e.g.*, a DS-3, OC-12 or larger “pipe”) and physically routed
18 through one or more Verizon-Illinois buildings where its tandem switches are located, but
19 not actually being switched by those tandems. This “groomed traffic”²⁴ can be efficiently
20 transported between the Global NAPs POI and individual Verizon-Illinois end offices using
21 one or more dedicated DS-1 channels established and interconnected at the Verizon-Illinois
22 tandem building using Digital Access Cross-Connect Systems (“DACS”) or multiplexers.

24. Grooming refers to actively managing the bandwidth resources so that the derived channels are used efficiently.

1 The only situations in which Global NAPs traffic would be physically switched through a
2 Verizon-Illinois tandem *switch* is for low-volume end offices and for “overflow” traffic
3 where the DEOT is being fully utilized.
4

5 Q. How does the work that Verizon-Illinois does in order to provide this “local calling area
6 transport” change if Verizon-Illinois is required to provide LATA-wide transport, *i.e.*, to
7 provide transport between all of its end offices in, for example, the Forrest LATA and a
8 single Global NAPs POI?
9

10 A. For the most part, the work that Verizon-Illinois is required to do is essentially the same, but
11 with two differences. First, the overall transport distance involved will be greater, on
12 average, if Verizon-Illinois provides “LATA-wide transport” rather than “local calling area
13 transport.” Second, in the some LATAs with more widely dispersed exchanges, the routing
14 can involve two ILEC tandem buildings rather than one. Again, however, as long as the
15 volume of traffic between the Verizon-Illinois end office and the Global NAPs POI is at the
16 DS-1 level or greater, the traffic will be routed through the tandem switch building as a
17 direct end office trunk, using a DACS rather than the tandem switch. So for the most part,
18 the principal source of difference in work — and cost — is the additional *distance* that, on
19 average, will be involved for LATA-wide vs. local calling area transport.
20

21 Q. Is it possible to estimate the difference in average transport distance for local calling area
22 transport versus LATA-wide transport?
23

A. Yes. In order to explain how this can be done, let me describe the methodology using a highly simplified example. Suppose that the Verizon-Illinois local calling area around the Global NAPs POI includes four end offices, A, B, C and D, at distances of 0, 5, 10 and 15 miles, respectively, from the Verizon-Illinois rate center in which the Global NAPs POI is located. Suppose that office “A” exchanges 20,000 minutes per month with Global NAPs, “B” exchanges 40,000 minutes, “C” exchanges 15,000 minutes, and “D” exchanges 25,000 minutes (100,000 minutes total). These figures are summarized on the following table:

| Local Calling Area | | | |
|-------------------------------------|-------------------|----------------|--------------------------|
| Weighted Average Transport Distance | | | |
| Exchange | Distance from POI | Traffic volume | Percent of total traffic |
| A | 0 miles | 20,000 | 20% |
| B | 5 miles | 40,000 | 40% |
| C | 10 miles | 15,000 | 15% |
| D | 15 miles | 25,000 | 25% |
| Weighted average distance | 7.25 miles | 100,000 | 100% |

From this data, we can calculate the *weighted average distance* for the full local calling area by multiplying the distance to each Verizon-Illinois end office by the relative percentage of total exchanged traffic associated with each Verizon-Illinois end office. In this illustration, the weighted average distance is 7.25 miles.

Now let's expand our illustration to a LATA-wide situation. End offices E, F, G and H are in the same LATA but outside of the local calling area:

| Local Calling Area | | | |
|-------------------------------------|-------------------|----------------|--------------------------|
| Weighted Average Transport Distance | | | |
| Exchange | Distance from POI | Traffic volume | Percent of total traffic |
| A | 0 miles | 20,000 | 13.97% |
| B | 5 miles | 40,000 | 27.77% |
| C | 10 miles | 15,000 | 10.42% |
| D | 15 miles | 25,000 | 17.36% |
| E | 20 miles | 25,000 | 17.36% |
| F | 30 miles | 15,000 | 10.42% |
| G | 40 miles | 3,000 | 2.08% |
| H | 100 miles | 1,000 | 0.69% |
| Weighted average distance | 13.16 miles | 144,000 | 100% |

Thus, for LATA-wide transport in this example, the weighted average distance is 13.16 miles, as compared with the 7.25 miles for local calling area transport. The *additional transport* associated with LATA-wide transport vs. local calling area transport is the difference between these two averages, *i.e.*, 5.91 miles. *Verizon-Illinois's cost for LATA-wide transport vs. local calling area transport is thus whatever it costs per minute, on average, for an additional 5.91 miles of transport.*

1 Q. How does that additional 5.91 miles of transport then translate into the additional cost of
2 LATA-wide transport?

3
4 A. A DS-3 transport facility contains 672 voice (DS-0) channels. There are approximately
5 43,000 minutes in a month. Hence, the theoretically maximum capacity of a DS-3 trunk is
6 $672 \times 43,000$, or about 29-billion minutes per month. Of course, that could occur only
7 under constant 24x7 use of all 672 channels. In actual practice, a DS-3 interoffice trunk
8 typically carries approximately 8.9-million minutes of traffic per month.²⁵ Verizon-
9 Illinois's currently-tariffed transport DS-3 mileage rate element is \$30.27.²⁶ Dividing that
10 amount by the 8.9-million minutes, I calculated a voice-grade transport rate per-minute per-
11 mile of \$0.000003401, *i.e.*, about three ten-thousandths of a cent.

12
13 Q. But doesn't the DS-3 tariff also contain a "fixed" monthly rate in addition to the per-mile
14 rate?

15
16 A. Yes, but the non-distance-sensitive "fixed" monthly rate would apply for all distances, both
17 within and outside of the local calling area. If we were to compare the DS-3 rate for a 10-

25. This estimate was obtained from the testimony of BellSouth's cost witness Cynthia K. Cox before the Georgia Public Service Commission in Georgia PSC Docket No. 13542-U, Direct Testimony of Cynthia K. Cox (BellSouth), April 3, 2001, at page 11. Ms. Cox testified that a "level of 8.9 million minutes of traffic per month is typically equivalent to a DS3 level."

26. Verizon-Illinois Inc. (GTE North Inc.), Facilities for Intrastate Access Tariff - Ill C.C. No. 10, Section 4.6.2(H), Ninth Revised Sheet No. 102.1, Effective May 27, 2000. In this calculation, I am conservatively using Verizon-Illinois' transport rate as found in its intrastate switched access tariff, which was intended to be based upon long run service incremental cost (LRSIC) at that time, but is two years old and thus significantly higher than a TELRIC-based rate would be today. Ill. CC Docket Nos. 97-0601 *et al*, Order, March 29, 2000, at 48.

1 mile facility with that for a 40-mile facility, the “fixed” component would be the same for
2 both, and hence the only *difference* between the two would be the additional 30 miles in the
3 longer facility.

4
5 So, returning to our illustration, the additional price for a DS-3 interoffice trunk that is 13.16
6 miles in length vs. one that is 7.25 miles in length can be calculated by multiplying the
7 difference between these two distances, 5.91 miles, times the \$30.27 rate per mile. That
8 works out to \$178.90 per month. Dividing that additional cost by the 8.9-million minutes
9 that can typically be pumped through a DS-3 each month, we get a per-minute cost of
10 \$0.000020101 per minute, *i.e.*, around two thousandths of a cent.

11
12 Q. The final cost result from this calculation is expressed on a per minute basis, which is how
13 common transport is tarified. Does this mean that you’re actually calculating a cost for
14 common transport instead of for dedicated transport?

15
16 A. No. What I am doing here is to translate the *tarified monthly rate for a dedicated DS-3*
17 *interoffice trunk* into a per-minute amount by dividing that monthly rate by the typical
18 traffic volume that would be carried by an interoffice trunk each month, namely 8.9-million
19 minutes. The matter of whether Verizon-Illinois would utilize common or dedicated
20 transport to carry the Global NAPs traffic between its end offices and the Global NAPs POI
21 is basically irrelevant to this cost calculation. The ILEC provides transport, local switching,
22 and in some cases tandem switching, whether the transport is confined to the local calling
23 area or LATA-wide. The only material difference between what the ILEC does in the case

1 of “local calling area transport” and “LATA-wide transport” relates to *distance*, and it is that
2 differential in *distance* that our study calculates.

3
4 Q. So far we've been looking at an illustration, a hypothetical calculation. Have you been able
5 to perform this same type of calculation for an actual local calling area and LATA served by
6 Verizon-Illinois?

7
8 A. Yes. I have developed a cost estimate using this method for the Forrest LATA (LATA
9 Number 366), where many of Verizon-Illinois's former GTE North exchanges in the state
10 are located. In this case, I have calculated the incremental costs that Verizon-Illinois would
11 incur to transport calls from its end users to a single POI in the Forrest LATA, relative to the
12 transport that Verizon-Illinois ordinarily would incur to complete calls that are entirely
13 within the local calling area of the exchange that contains that POI. To perform this
14 calculation, I have assumed that Global NAPs would locate a single POI in the Bloomington
15 exchange. To date, Global NAPS has not installed facilities in the Forrest LATA , but
16 Bloomington has a Verizon-Illinois tandem so it is reasonable to assume placement of a POI
17 there.²⁷ Verizon-Illinois’s flat-rate local calling area for Bloomington (assuming flat rate
18 residential service) includes the Carlock, Downs, Ellsworth, Heyworth, Hudson, McLean,
19 and Stanford exchanges.²⁸

27. The specific base point used for my calculations is the V and H location of Verizon-Illinois’s switch BLTNILXD (V=6358, H=3483)..

28. Verizon North Inc. (formerly GTE North Incorporated), General Exchange Tariff, Ill C.C. NO. 9, Section 2.4.3.2, Sixteenth Revised Sheet No. 9, Effective April 16, 2002. This is the Extended Area Service scope for the Bloomington exchange, but there is no additional EAS charge for Bloomington, so Verizon-Illinois residential exchange customers can have local

(continued...)

1 Q. How did you determine the average transport distance for each of these two cases?

2
3 A. For these calculations, I assumed that the volume of traffic from each Verizon-Illinois
4 central office is proportional to the number of access lines served out of that office. In other
5 words, I am assuming that each access line served by Verizon-Illinois is equally likely to
6 place a call to an access line served by Global NAPs. Because Global NAPs has not yet
7 begun to exchange traffic with Verizon-Illinois in the state, this is the most reasonable
8 demand assumption to make. It is implemented by using weighting factors that equal the
9 percentage of the total number of access lines in the given area (local calling area or LATA)
10 that are served by any particular central office. Those weighting factors are applied against
11 the distance from the switch to the POI location (Bloomington).

12
13 Consider, for example, the calculation of the average transport distance within the
14 Bloomington local calling area. Because the Heyworth central office serves 1.94% of the
15 Verizon-Illinois lines within the Bloomington local calling area, its distance to the
16 Bloomington central office, 11.5 miles, is weighted by 1.94%, to produce a weighted
17 distance of 0.22 miles. When combined with the weighted transport distance for the other
18 central offices in the Bloomington local calling area, this produces an average weighted
19 transport distance of 1.61 miles. These calculations are shown in Table 1 of my Attachment
20 3.

28. (...continued)
calling privileges throughout that area under their basic flat-rate charge (currently \$15.99 per month). The Bloomington EAS also includes three independent LEC exchanges, namely Cooksville, Danvers, and Towanda, which are not included in my calculations of Verizon-Illinois' transport costs.

1 Q. Did you follow the same weighting process when performing the calculation of Verizon-
2 Illinois's LATA-wide transport?

3
4 A. Yes. These calculations are presented in Table 2 in Attachment 2. As shown therein, the
5 average LATA-wide transport distance for calls originated by Verizon-Illinois customers to
6 the Bloomington (BLTNILXD) POI is 15.51 miles. Thus, after subtracting the 1.61 miles of
7 transport that occurs within the Bloomington (BLTNILXD) local calling area, the *additional*
8 transport distance to reach the single LATA-wide POI is 13.90 miles. See Table 3 of my
9 Attachment 2.

10
11 Q. How does this additional average transport distance of approximately 14 miles translate into
12 the additional transport costs associated with a single POI covering the entire Forrest LATA
13 vs. the case of having individual POIs for each local calling area in that LATA?

14
15 A. A DS-3 transport facility contains 672 voice (DS-0) channels. In all, a DS-3 interoffice
16 trunk can carry approximately 8.9-million minutes of traffic per month.²⁹ Dividing Verizon-
17 Illinois's currently-tariffed dedicated transport DS-3 mileage rate element of \$30.27³⁰ by
18 8.9-million minutes, I calculated a voice-grade transport rate per-minute per-mile of
19 \$0.000003401, *i.e.*, about three ten-thousandths of a cent. Multiplying this per-mile rate by

29. This estimate was obtained from the testimony of BellSouth's cost witness Cynthia K. Cox before the Georgia Public Service Commission in Georgia PSC Docket No. 13542-U, Direct Testimony of Cynthia K. Cox (BellSouth), April 3, 2001, at page 11. Ms. Cox testified that a "level of 8.9 million minutes of traffic per month is typically equivalent to a DS3 level."

30. GTE North Inc., General Exchange Tariff, Ill. CC No. 10, Section 4 (Facilities for Intrastate Access), Ninth Revised Sheet 102.1, Effective Date May 27, 2000.

1 the 13.9 miles of additional transport associated with a single POI vs. a POI in each of
2 Verizon-Illinois's local calling areas, I calculated the average additional transport cost per
3 minute at \$0.00004728, *i.e.*, about five one-thousandths of a cent. See Table 3 of
4 Attachment 3 to my testimony for the workpaper showing this calculation.
5

6 Q. In your selection of the DS-3 level as the appropriate unit of transport capacity to apply in
7 this analysis, did you consider the fact that because Verizon-Illinois's service territory in
8 Illinois includes some smaller towns and rural areas, not all of its interoffice transport routes
9 face demand that is sufficiently high to utilize a DS-3 facility's entire capacity?
10

11 A. Yes, but I have concluded that the DS-3 capacity level is appropriate to apply for this
12 purpose, notwithstanding that some Verizon-Illinois exchanges may typically generate
13 demand that in aggregate falls below the DS-3's full capacity (*i.e.*, 672 simultaneous voice
14 calls). First, Verizon-Illinois's switching infrastructure in Illinois includes 404 remote
15 service units (RSUs), which constitute just over 81% of its total of 496 central office
16 switches in the state. RSUs are typically used to serve access lines in smaller exchanges
17 where it is uneconomic to deploy a fully-functional standalone switch. Because an RSU
18 connects to a host switch by an "umbilical" fiber transport facility (which is typically of DS-
19 3 capacity and may traverse dozens of miles in its own right), the effect is that the demand
20 generated by those smaller exchanges served by RSUs is aggregated at the host switch,
21 thereby increasing the capacity requirements for transport from the host to other points in
22 the ILEC network. Thus, small exchanges that might otherwise require interoffice transport
23 at a small capacity level (*e.g.*, 20-50 simultaneous voice grade calls) are instead likely to be
24 served by an RSU and a host with considerably larger interoffice trunk connections.

1 Second, the economics of transport are better than linear, in that the cost of a DS-3 transport
2 link is much less than the cost of 28 DS-1 facilities (which would provide capacity
3 equivalent to a DS-3), so that the break-even for employing a DS-3 is much lower than a
4 requirement that all 672 potential channels of a DS-3 must be utilized. For these reasons, a
5 DS-3 capacity is the appropriate choice for my cost analysis.³¹

6
7 Q. Is there any reason to think the transport cost estimate you have developed may actually be
8 high?

9
10 A. Verizon-Illinois's \$30.27 DS-3 mileage rate has been in effect since June 16, 2000, yet, as I
11 described above, transport costs have been continuously falling. Moreover, that rate is
12 considerably higher than the cost-based DS-3 mileage rates recently established for other
13 ILECs. For example, SBC's Texas operating company, Southwestern Bell Telephone
14 Company (SWBT), has a DS-3 transport rate of \$16.16 per-mile in the Suburban zone, as
15 was established in its generic interconnection agreement, T2A,³² which has been entered

31. It is also worth noting that, even if one were to recalculate Verizon-Illinois transport costs using its DS-1 mileage element instead of the DS-3 assumption I made, it would not change the order of magnitude of the cost result. In that case, the average additional transport cost (for the 13.9 miles of extra transport) would be \$0.0000520 per minute, approximately 10% higher than the value I calculated. This is derived as follows: 13.9 miles x \$1.19 (Verizon-North's tariffed direct-trunked transport DS-1 mileage rate) / 318,000 (DS-1 MOU per month).

32. Texas T2A Agreement (T2A), Revised 01/31/00, Appendix Pricing – UNE Schedule of Prices (dated 4/16/01). See, <http://clec.sbc.com/unrestr/interconnect/t2a/t2a.cfm> (accessed 11/28/01). The \$16.16 rate is the higher of the two rates provided for DS3 interoffice Transport, namely \$16.16 applies for Suburban zones and \$9.29 for Urban zones.

1 into by numerous CLECs.³³ If the \$16.16 per-mile rate is applied instead of the \$30.27 rate
2 as a surrogate for Verizon-Illinois's actual costs in my calculation, the per-minute cost for
3 the additional 13.9 miles of transport outside of Verizon-Illinois's local calling area for
4 Bloomington would be \$0.00002524 , *i.e.*, about two and a half thousandths of a cent (see
5 Table 4 of Attachment 3 to my testimony).

6
7 However, that value may still be too high relative to a truly forward-looking TELRIC cost
8 estimate. In April of 2001, the Georgia Public Service Commission established an interim
9 cost-based per-mile charge for BellSouth's DS-3 transport of only \$2.72.³⁴ When Verizon-
10 Illinois's cost for the additional 13.9 miles of transport are recalculated using that per-mile
11 value, the Company's costs fall to a truly minuscule \$0.000004248 per minute, *i.e.*, about
12 four ten-thousandths of a cent (see Table 5 of Attachment 3). While Verizon-Illinois may
13 argue that its own costs are higher (*e.g.*, because it's transport network has facilities that are
14 not the most technically-advanced that are commercially available today), the Commission
15 should bear in mind that the issue is to determine the forward-looking economic cost that
16 the ILEC confronts for transport, *not* the costs of its in-place facilities (which may well be
17 more expensive than the TELRIC level). The recent Supreme Court decision affirming the

33. Texas Public Utilities website, Texas 271 Agreements (T2A) Project #16251 (listing of interconnection agreements entered into under T2A). *See*, www.puc.state.tx.us/telecomm/projects/16251/Texas271A.cfm (accessed 11/28/01).

34. Set by the Georgia Public Service Commission as BellSouth's interim DS-3 mileage rate on April 24, 2001, as stated in Docket No. 11853-U. This rate is listed in Docket No. 10692, Document No. 47662, 6/04/01, *Revised Statement of Generally Available Terms and Conditions for Interconnection — Unbundling and Resale*, May 31, 2001, GA SGAT-Attachment A. BellSouth's cost witness Ms. Cox has confirmed that this is a "cost-based rate." *See* Cox Direct (April 3, 2001) at 8, lines 1-6.

1 FCC's TELRIC rules, in particular affirming the so-called "hypothetical network" principle
2 that is central to TELRIC, has finally laid to rest the arguments to the contrary advanced by
3 Verizon and other ILECs.³⁵
4

5 Q. What conclusions do you draw from these calculations?
6

7 A. These calculations demonstrate that the additional costs that Verizon-Illinois would incur to
8 transport traffic between a Global NAPs POI in Bloomington and Verizon-Illinois's central
9 offices LATA-wide, relative to the costs that Verizon-Illinois would incur for transport
10 confined entirely within the Bloomington local calling area, are extremely small, on the
11 order of five one-thousandths of a cent per minute or, more likely, even less than that.
12

13 Q. Wouldn't Global NAPs incur costs of this same order-of-magnitude if it were required to
14 deploy its own transport network rather than having Verizon-Illinois perform this function?
15

16 A. No, Global NAPs would incur significantly higher costs if it were forced to undertake that
17 transport on its own network. Because Verizon-Illinois serves some 862,000 switched
18 access lines statewide, it is able to operate at a scale much larger than any one CLEC such as
19 Global NAPs, and therefore enjoys scale economies that are not available to CLECs. The
20 costs of fiber optic transport facilities are particularly sensitive to scale, *e.g.*, the unit cost of
21 carrying an additional voice grade circuit on an OC-3 transport system (which equates to
22 2016 voice grade channels) is much less than the comparable unit cost for an OC-1 transport

35. Verizon Communications Inc. et al v. FCC, No. 00-511 (S. Ct. May 13, 2002).

1 system (672 channels). It is contrary to the public policy goal of promoting
2 telecommunications competition to require that CLECs construct their own network
3 facilities where it would be inefficient to do so. Indeed, assuring that CLECs are able to
4 access and benefit from the economies of scale that are present in ILEC networks as a result
5 of their massive embedded customer base and ubiquitous coverage was one of the express
6 goals of the *Telecommunications Act* and, in particular, of Sections 251 and 252, which
7 expressly require that ILECs provide CLECs with access to their networks on an unbundled
8 basis at forward-looking cost-based rates.

9
10 **Verizon-Illinois should not be allowed to prohibit Global NAPs from offering Foreign**
11 **Exchange service to its customers using “virtual” NXX arrangements, given that the**
12 **ILECs’ costs are not affected by that practice and the companies themselves offer FX**
13 **service in which “virtual” telephone numbers are assigned to the FX customer.**
14

15 Q. Mr. Lundquist, can you summarize the issue concerning the use of “virtual” NXX
16 arrangements that the Commission must arbitrate in this case?

17
18 A. Yes. In its proposed interconnection agreement with Global NAPs, Verizon-Illinois has
19 taken the position that Global NAPs’ local calling areas should mirror Verizon-Illinois’s
20 local calling areas.³⁶ Global NAPs and other CLECs employ non-geographic assignments of
21 NPA-NXX codes, sometimes referred to as “virtual” NXX arrangements, in order to offer a
22 service to their customers that competes directly with Verizon-Illinois’s own longstanding
23 Foreign Exchange (FX) service. The ILECs consider those arrangements to amount to an
24 evasion of the retail toll tariffs they apply to their own end users (who may place such calls),

36. See, Global NAPs’ Petition, at pages 16 and 18.

1 and thus want to compel CLECs to conform to their established local calling area definitions
2 and a geographically-linked application of NPA-NXX codes.³⁷

3
4 Significantly, Verizon-Illinois offers its own customers serving arrangements wherein the
5 telephone number that is assigned to the customer is not rated in the same exchange as the
6 customer is physically located and where the service is physically provided. One such
7 service arrangement that ILECs have traditionally offered for decades is known as “Foreign
8 Exchange” (“FX”) service. By seeking the opportunity to define and utilize virtual NXX
9 codes, Global NAPs is seeking to provide its customers with services and serving
10 arrangements that are comparable to and competitive with those currently being offered by
11 Verizon-Illinois.³⁸

12
13 Q. You just referred to ILEC local calling areas — how do they enter in to the issue of
14 “virtual” NXX code assignments?

15
16 A. Recall that a local calling area generally consists of one or more individual exchanges
17 (sometimes referred to as “rate centers”) to which customers may place calls without a toll
18 charge (“outward local calling area”) or from which customers may receive incoming calls
19 without the calling party being subject to a toll charge for such calls (“inward local calling
20 area”). An exchange is an administrative definition of a geographic area within which all

37. *See, id.* at pages 20-21.

38. *See*, GTE North Inc., General Exchange Tariff Ill. C.C. No. 9, Section 10, First Revised Sheet 30, Effective November 1, 1994 (Verizon North Inc.’s foreign exchange tariff). This tariff indicates that the Company’s charges for foreign exchange service include the applicable basic exchange service rate at the “open” end and applicable private line charges at the “closed” end.

1 customers receive identical rating and rate treatment with respect to both outgoing and
2 incoming calls. In non-metropolitan areas, an exchange usually corresponds to the area
3 served by a single wire center or central office switch. In metropolitan areas, an exchange
4 may include an area served by more than one wire center.³⁹

5
6 The definition of local calling areas is fundamental to the “virtual” NXX issue, because the
7 only reason anyone would ever care about assigning a customer in one location a telephone
8 number with an NXX code associated with another location — that is, the “virtual” NXX
9 issue — is if it matters that the customer is not in the local calling area associated with the
10 assigned telephone number. Traditionally, local calling area boundaries have served to
11 delineate the rating treatment for an ordinary POTS call, *i.e.*, whether it would be rated
12 according to the ILEC’s local service tariff, or whether toll. In order to fully understand the
13 ramifications of allowing “virtual” NXX code assignments, one first needs to consider how
14 NPA-NXX codes are used for POTS call rating and routing.

15
16 Q. How does a telephone company determine, for any given call, whether it is a local call or if
17 a toll charge applies?

39. The precise definition of a local calling area tends to be more complex. Over time, most states have established one or more “optional extended area calling” arrangements under which the same call might be rated as toll for a customer that does not subscribe to the extended arrangement, but local for one who does. However, I will use the term “local calling area” to refer to the rate centers that a subscriber can call without incurring a toll charge from a basic one-party flat rate residential (1FR) or business (1FB) access line, *i.e.*, the subscriber’s home exchange and EAS exchanges.

1 A. The area code (NPA) and central office code (NXX) of a telephone number (NPA-NXX)
2 are, with limited exceptions, mapped specifically to a particular exchange. For example, the
3 828-586 NPA-NXX uniquely specifies the Bloomington exchange. There may be, and
4 (particularly for urban areas usually are) more than one NPA-NXX code associated with an
5 exchange; since the onset of local telephone service competition, some of the NPA-NXX
6 codes may be “held” by the incumbent LEC while others may be assigned to (“held by”)
7 one or more CLECs. When a call is placed, the dialed number is examined by the
8 originating central office switch to determine whether to route the call directly to the central
9 office serving the dialed NPA-NXX or whether to route the call through an intermediate
10 switching entity known as a tandem switch. The central office thus “translates” the dialed
11 number into a routing for the call. It may also determine, through a lookup in a reference
12 table maintained in the switch itself, whether, based upon the dialed NPA-NXX code, the
13 call is to be rated as “local” or “toll.” In some cases, this determination may affect the
14 dialing sequence that the customer is required to use in order to place the call. The rating of
15 the call *for billing purposes* is also based upon the dialed NPA-NXX, with the billing
16 software looking to reference tables for the treatment and applicable rate for a call
17 originated at one NPA-NXX and terminated at another NPA-NXX.

18
19 Q. Why was the “local” versus “toll” distinction originally established in the early days of the
20 telephone industry?

21
22 A. The “local” versus “toll” distinction essentially grew out of the architecture of the earliest
23 telephone networks. Originally, an exchange generally referred to the geographic area
24 served by a manual switchboard to which all of the telephone lines within that exchange

1 were connected. An operator would complete “local” calls by physically plugging the
2 calling party’s line into the called party’s line using a patch cord. If the call was destined to
3 a customer served by a different switchboard (*i.e.*, in a different exchange), the operator
4 would signal the terminating switchboard and instruct the operator at that location as to
5 which phone line the call was to be connected. Generally, such “inter-exchange” calls were
6 rated as “toll” and additional charges for the call would apply. For calls to nearby
7 exchanges, direct trunks would interconnect the individual switchboards; however, for
8 longer distances, one or more intermediate switchboards would be involved in
9 interconnecting trunks so as to achieve the desired end-to-end connection. Distance was
10 thus a major factor in both the complexity and the cost of individual calls.

11
12 As the number of telephone lines increased and mechanized switches replaced cord
13 switchboards, the “exchange” began to take on more *administrative* properties rather than
14 the *physical* properties associated with individual switchboards. Multiple central office
15 switches could — and did — serve the same “exchange,” and local calling was extended to
16 include nearby exchanges as well as the subscriber’s “home” exchange. Nevertheless,
17 maintaining a rating distinction between local and toll calls made sense for many years,
18 because it generally reflected significant distance-based cost differences between the two
19 classes of calls.

20
21 Q. In today’s modern digital telecommunications networks, is the local/toll rating distinction
22 still supported by distance-based cost differences between “local” and “toll” calls?
23

1 A. No, it is not. The explosion in telecommunications technology over the past two decades,
2 and particularly the enormous gains in fiber optic transmission systems capacity that I
3 discussed earlier in my testimony, has reduced the cost of telephone usage to a mere fraction
4 of a cent per minute. It also has made any physical distinction that may have once existed
5 between “local” and “toll” calls all but obsolete, and has essentially eliminated *distance* as a
6 cost-driver for all telephone calls.

7
8 Q. Has distance in fact ceased to be a basis for pricing in those sectors of the telecommuni-
9 cations industry that are now or that have become robustly competitive?

10
11 A. Yes. It is now widely recognized that both the long distance and wireless service markets
12 are characterized by intense competition. Distance has all but disappeared entirely in
13 interstate long distance pricing structures. Under most of the pricing plans being offered by
14 interexchange carriers to residential and business consumers, the price of a 110-mile
15 interstate toll call from Bloomington, IL, to Terre Haute, IN is exactly the same as the price
16 of a 1,637-mile call from Bloomington, IL to San Diego, CA. Last year, AT&T introduced
17 an “AT&T Unlimited Plan” that offers unlimited interLATA and intraLATA direct-dialed
18 toll calling to other AT&T residential toll subscribers nationwide for a flat \$19.95 a month,
19 with a non-distance-sensitive charge of \$0.07 per minute for the same types of calls to non-
20 AT&T subscribers.⁴⁰ Recently, Worldcom has introduced its “The Neighborhood” plan
21 which provides a bundled package of local minutes, Caller ID and other vertical features,

40. “AT&T Unlimited Plan” at http://www.shop.att.com/wrapper?portal=shopatt&bannerid=ILB011DRTTV&product=shopatt_orp2p), accessed 3/7/02.

1 and long-distance calling with a \$0.069 distance-insensitive rate.⁴¹ Distance-based charges
2 have also disappeared in the *international* long distance market as well, although country-
3 specific price differences, based upon factors *other than distance*, persist.

4
5 Wireless carriers have also largely eliminated distance as a pricing element. Prior to the
6 entry of PCS competition, cellular carriers offered very limited local calling areas (often
7 replicating precisely the local calling area defined by the ILEC for the exchange in which a
8 particular cell phone was rated), and also imposed high “roaming” charges for outward calls
9 that were originated outside of the customers “home” service territory (even where the call
10 was originated from another service territory controlled by the same cellular carrier). As
11 PCS carriers came into the market, they began to offer extended, sometimes *nationwide*,
12 local calling, and have also introduced calling plans that eliminate most or all roaming
13 charges. Both Sprint PCS and AT&T Wireless Services have been offering standard calling
14 plans that make no distinction between “local” and “long distance” calls or otherwise charge
15 on the basis of distance.⁴² Competitive pressure from these companies has forced incumbent
16 cellular carriers such as Verizon-Illinois Wireless or Cingular Wireless to adopt similar non-
17 distance-sensitive pricing plans. For example, Verizon-Illinois Wireless offers calling plans

41. “The Neighborhood” at http://www.theneighborhood.com/res_local_service/jsps/sbdefault.jsp, accessed 5/14/02.

42. The Sprint PCS “Real Nationwide Long Distance Included” plans provide various usage packages for a flat monthly fee, after which a distance-insensitive charge of \$0.40 per minute applies. See, <http://www1.sprintpcs.com/explore/servicePlansOptionsV2/PlansOptions.jsp> (accessed 01/09/02).

1 that are marketed as having no roaming or long distance charges for calling anywhere within
2 the United States.⁴³

3
4 In fact, one of the *only* segments of the telecommunications industry where distance-based
5 pricing (in the form of local/toll distinctions and/or mileage-based rates) persists is in the
6 largely noncompetitive *local* telecommunications sector; indeed, the fact that this pricing
7 remnant of a monopoly era persists in the case of local telephone services serves to *confirm*
8 the utter lack of effective competition in this sector.

9
10 Q. Is it appropriate for competing carriers to adopt local calling area definitions that differ from
11 those of the ILEC?

12
13 A. Yes. This Commission should welcome competition that is based, at least in part, on
14 expanded local calling areas. One of the primary public policy goals of introducing
15 competition into the local telecommunications market has been specifically to encourage
16 and stimulate innovation in the nature of the services that are being offered. CLECs should
17 not be limited to competing solely with respect to *price*, nor should they be expected to
18 become mere “clones” of the ILEC with respect to the services they offer. And indeed, the
19 extent of the local calling area is itself becoming something that some CLECs see as an
20 opportunity to differentiate their products from those being offered by the ILEC. A CLEC
21 might, for example, offer its customers a larger local calling area than that being offered by

43. See, for example, the “SingleRate” plans currently being offered by Verizon-Illinois Wireless, at http://www.VerizonIllinoiswireless.com/ics/plsql/customize.intro?p_section=.intro?p_section=PLANS_PRICING (accessed 3/12/02).

1 the ILEC as a means for attracting customers or, alternatively, might choose to offer a
2 *smaller* local calling area than the ILEC's service provides, at a correspondingly lower
3 price. ILECs themselves are also changing the definition of "local calling area" by
4 introducing optional calling plans that provide for extended area local calling including, in
5 some cases, all exchanges within the subscriber's LATA.⁴⁴

6
7 This is not to say that establishing larger local calling areas — whether inward or outward
8 — will necessarily be the optimal competitive strategy for all CLECs, or even for the ILEC.
9 One of the effects of decades of tight regulation of ILEC local service plans has been that
10 we don't really know what combinations of price, inward/outward calling areas, and other
11 features will appeal to different segments of the market. So, for an initial period — in fact,
12 likely lasting for several years — I would expect to see different CLECs experimenting with
13 different service plans, as long as regulators grant them the necessary flexibility to do so.

14
15 Q. How important is it to CLECs such as Global NAPs to be granted the flexibility to make
16 non-geographic assignments of NPA-NXX codes to their customers?

17
18 A. It is extremely important, because such "virtual" NXX use of code assignments allows
19 CLECs such as Global NAPs to overcome the constraints ordinarily imposed upon their
20 customer's inward local calling area definitions by the ILEC's conventional local calling

44. Indeed, in some locations, ILECs have established optional calling plans that allow unlimited, flat-rated calling — "local" in all relevant respects — to all locations within an entire LATA. This type of arrangement only highlights that even in the case of the ILEC, the distinction between "local" and "toll" is largely arbitrary in terms of network technology and the underlying costs of providing service.

1 areas and to be able to compete with comparable “virtual” services being offered by
2 Verizon-Illinois. The problem is that in the case of incoming calls, the local calling area
3 applicable to the *calling party* (who we can assume is most likely to be an ILEC customer)
4 will necessarily govern the rate treatment for the call. Recall from our earlier discussion
5 that the determination as to whether a particular call is to be rated as local or toll will be
6 based upon the NPA-NXX code of the called telephone number. A CLEC can define an
7 expanded *outward* local calling area for its customer simply by placing the NPA-NXX
8 codes for one or more additional exchanges into the (outward) local rating table of its
9 switches. Under current rules, however, there is no corresponding requirement for an ILEC
10 to symmetrically place the same NPA-NXX code(s) within the local rate tables of *its*
11 switches, so that ordinarily calls to those NPA-NXXs will be rated at toll calls. However,
12 the “virtual” NXX solution allows a CLEC to compete with Verizon-Illinois’s FX service.

13
14 Q. Does it constitute an evasion of the ILEC’s toll tariff, if a CLEC uses the “virtual” NXX
15 method to establish one or more locally-rated inbound routes that otherwise would be
16 subject to toll rates if placed to an ILEC subscriber in the same rate center ?

17
18 A. No, not in my opinion. As I have explained earlier in my testimony, the prevailing
19 distinction between “local” and “toll” is an artifact of historic network architectures and
20 technological conditions that may no longer be applicable. There is no reason why
21 competitive marketplace forces should not be permitted over time to expand or otherwise
22 reshape the traditional definition of “local calling” and perhaps ultimately to eliminate the
23 notion of “intraLATA toll” altogether, especially given that call distance no longer

1 influences costs in the manner that it did when the “local” versus “toll” pricing distinction
2 was first established.

3
4 Moreover, as I have noted, the ILECs have for many years offered Foreign Exchange (FX)
5 services, which allow customers to expand their inward local calling areas in essentially the
6 same way that CLECs seek to do through “virtual” NXX arrangements.⁴⁵ In fact, some
7 ILECs have described the CLECs’ expanded inward calling area services as a “Virtual
8 Foreign Exchange” type of service.

9
10 Q. How does a traditional ILEC FX service work?

11
12 A. Suppose that a customer located in exchange A might want a local telephone number
13 presence in exchange B, from which exchange A would otherwise be a toll call. A caller in
14 exchange B dials the FX number as a local call to exchange B, yet the call is physically
15 delivered to the FX customer located in exchange A. Usually, but not always, the FX
16 service involves a leased line connecting the central offices in the two exchanges. The FX
17 customer pays for the dial tone line in exchange B and pays for the leased line between
18 exchange B and exchange A. Sometimes, the ILEC may elect to provision the FX service
19 via a switched rather than a dedicated interexchange connection. Such an arrangement, if
20 used, is (supposed to be) transparent to the customer, who will still be charged a flat
21 monthly rate for the leased line. Regardless of how the FX service is priced by the ILEC,
22 the essential fact is that the ILECs have tariffed FX services that allow their end users to

45. GTE North Inc. Illinois, General Exchange Tariff Ill. C.C. No. 9, Section 10, First Revised Sheet 30, Effective November 1, 1994.

1 place calls to points beyond their local calling area and avoid incurring toll charges, just as
2 CLECs such as Global NAPs seek to do by offering the “virtual FX” services made possible
3 by non-geographic NPA-NXX code assignments.
4

5 **Verizon-Illinois’s transport costs are entirely unaffected by the location at which Global**
6 **NAPs terminates a Verizon-Illinois-originated call to a Global NAPs customer.**
7

8 Q. Mr. Lundquist, consider the case where a Verizon-Illinois end user places a call to a
9 customer served by Global NAPs in Illinois. Would the costs incurred by Verizon-Illinois
10 vary at all depending upon whether Global NAPs delivered that call to a telephone number
11 with a geographic NPA-NXX code assignment, versus a non-geographic assignment?
12

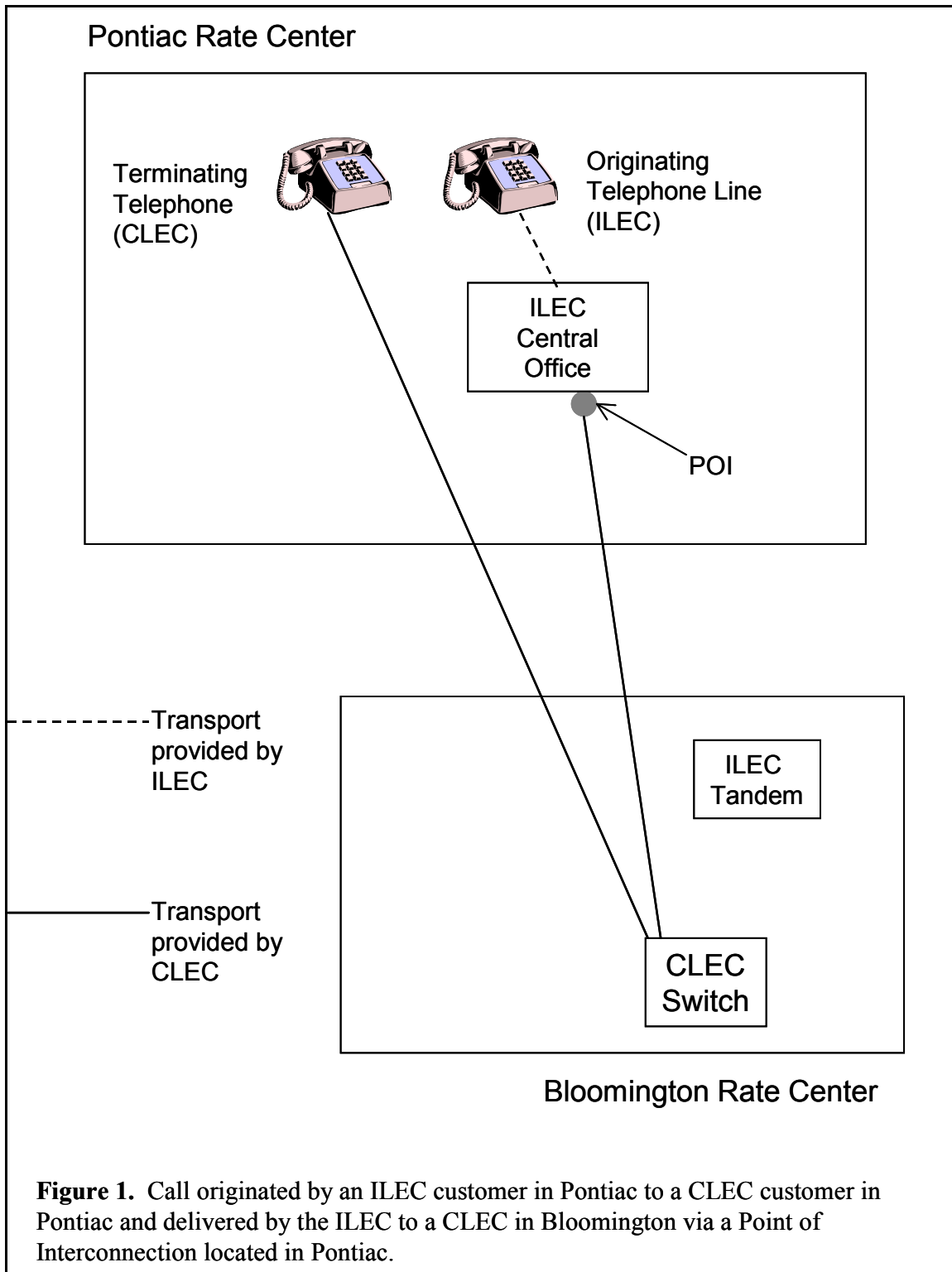
13 A. No, not at all. As I shall demonstrate, the costs that an ILEC incurs in carrying and handing
14 off originating traffic to CLECs is entirely unaffected by the location at which the CLEC
15 delivers the call to the CLEC’s end user customer. As long as the CLEC establishes a POI
16 within the LATA, it should be allowed to offer service in any rate center in the LATA and to
17 terminate calls dialed to that rate center at any location it wishes. Thus, it is entirely
18 reasonable and appropriate that CLECs be permitted to assign NPA-NXX codes to end users
19 outside the rate center in which the NPA-NXX is homed and still be entitled to full
20 reciprocal compensation with respect to such calls.
21

22 To be sure, an ILEC’s *revenues* may well be affected by, for example, a CLEC’s decision to
23 offer a larger local calling area than that being offered by the ILEC, but that impact is a
24 *competitive loss* to the ILEC to which it has ample opportunity to respond competitively, for
25 example, by offering its own customers expanded inward (and perhaps outward as well)

1 local calling. An ILEC should not be permitted to escape the financial consequences of its
2 failure to successfully compete by refusing to compensate other competing carriers for work
3 that they have legitimately performed, nor should it be permitted to prevent its competitors
4 from introducing new and innovative services that amount to more than merely parroting of
5 the ILEC's traditional offerings.

6
7 Q. How is it that the cost to the ILEC is not affected by the location at which the CLEC
8 delivers traffic to its customers?

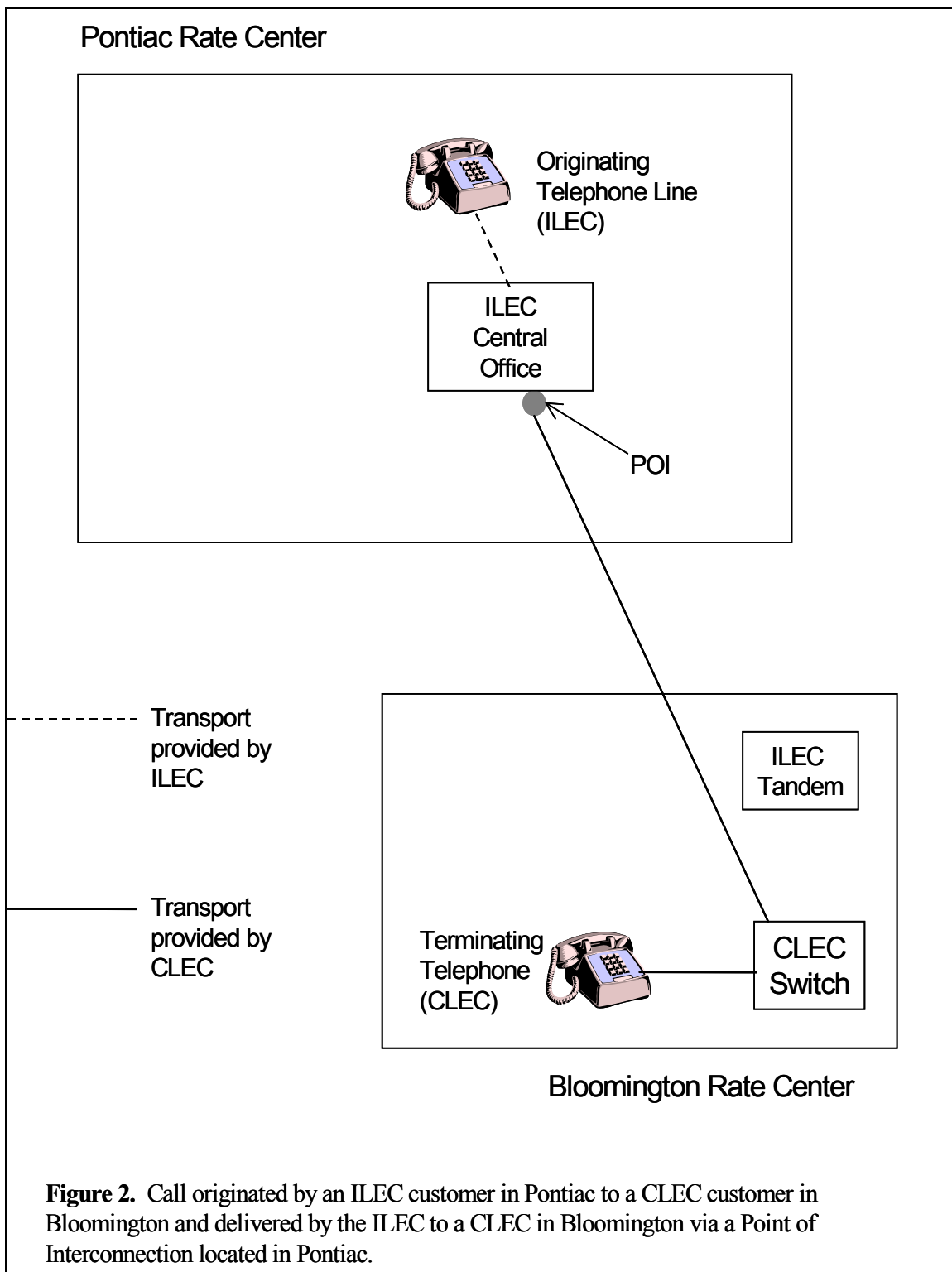
9
10 A. Perhaps the best way to explain this point is by way of examples. Please refer to Figure 1
11 below. In this example, the call is originated by an ILEC customer in Pontiac and is
12 delivered by the ILEC to a CLEC in Bloomington via a Point of Interconnection located in
13 Pontiac. The CLEC's customer to whom the call was directed is also located in Pontiac, and
14 so the CLEC needs to transport the call back to the delivery point in Pontiac. In this
15 example, both of the ILEC's conditions for reciprocal compensation have been met, *i.e.*, the
16 POI is located within the local calling area of the originating ILEC access line (*i.e.*, in
17 Pontiac), and the call is terminated to a CLEC customer who is also located within the local
18 calling area of the originating ILEC access line in Pontiac.



1 Now let's change the facts of this example so as to violate one of the two assumed
2 conditions for reciprocal compensation. Here, the ILEC's Pontiac customer still dials a
3 Pontiac telephone number (*i.e.*, a CLEC NPA-NXX that is rated to Pontiac), but instead of
4 the CLEC delivering the call to a CLEC customer in Pontiac as in the previous example, the
5 CLEC delivers the call to a CLEC customer physically located in Bloomington. Note that
6 the POI at which ILEC hands off the call to the CLEC is still in Pontiac, *i.e.*, still within the
7 local calling area of the ILEC access line that originated the call. In this circumstance, the
8 physical location of the point of delivery (Bloomington in this case) is not within the local
9 calling area of the originating ILEC telephone and, as I understand it, an ILEC placing such
10 limits on reciprocal compensation would argue that this is not a "local" call and that no
11 reciprocal compensation is required in this case.

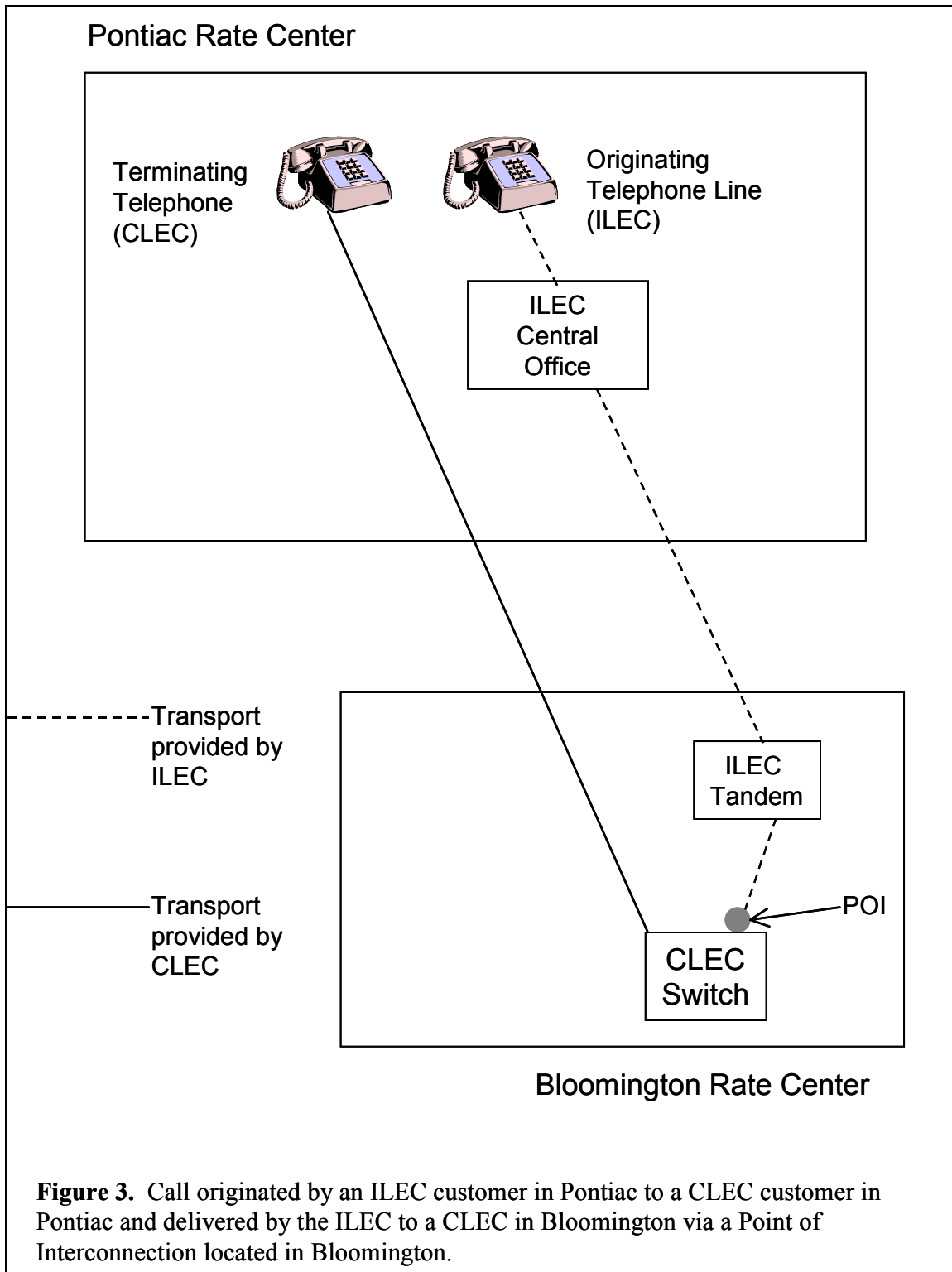
12
13 Q. Is there any difference in the work that ILEC would be required to perform in handing off
14 the originated call to the CLEC between these two examples?

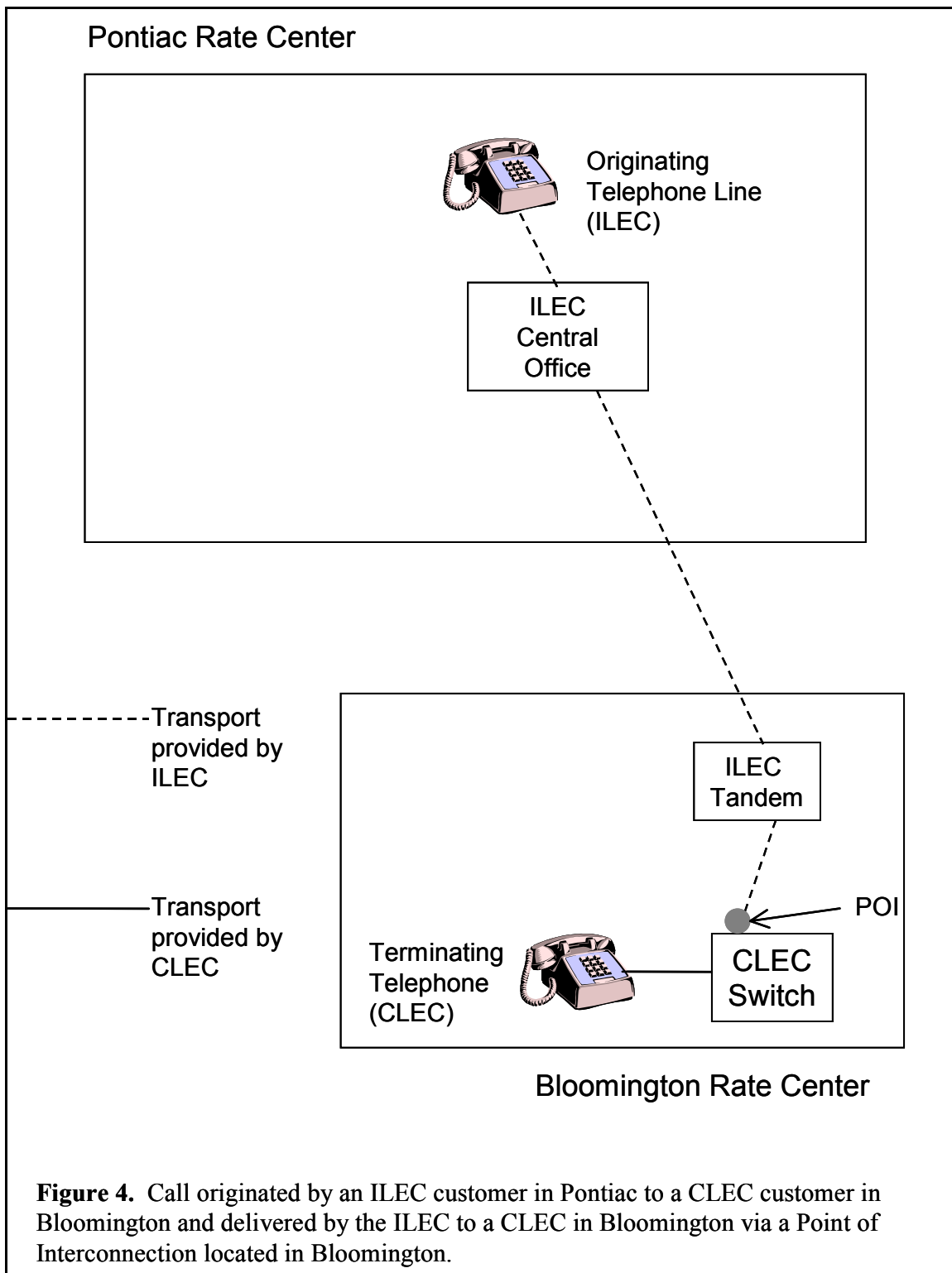
15
16 A. No, and that is the essential point of these examples: In both of these cases, the ILEC's
17 work — and its costs — are absolutely identical. The sole distinction between the two
18 examples lies in what the *CLEC* does once it receives the call from ILEC at the POI. In the
19 first case (Figure 1), the CLEC hauls (transports) the call all the way back from
20 Bloomington to Pontiac; in the second case (Figure 2), the CLEC delivers the call to a
21 customer located near its Bloomington switch. In both of these cases, the ILEC carries the
22 call from the originating telephone to the Pontiac POI, and so its work is entirely unaffected
23 by where the CLEC ultimately delivers the call.



1 Q. What if you were to eliminate the condition that a Point of Interconnection must be
2 established in each local calling area. Does the location of the point of delivery by the
3 CLEC to its end user customer then affect the ILEC's costs?

4
5 A. No, it does not. To see why, please refer to Figures 3 and 4 below, which correspond with
6 Figures 1 and 2, respectively, except that in these two cases I am assuming that the POI is
7 now located in Bloomington. In Figure 3, the ILEC customer in Pontiac dials a CLEC
8 number rated to Pontiac, as before. Because the POI is in Bloomington, the ILEC is
9 required to transport the call over its network to Bloomington, where it is handed off to the
10 CLEC. As in Figure 1, the CLEC then transports the call *over the CLEC's network* back to
11 Pontiac for delivery to its customer. In Figure 4, the ILEC customer in Pontiac also dials a
12 CLEC number rated to Pontiac, and the ILEC transports the call to the POI in Bloomington.
13 However, as in Figure 2, the call is then delivered by the CLEC to a CLEC customer in
14 Bloomington rather than in Pontiac. As was the case between Figures 1 and 2, there is
15 absolutely no difference in the work that the ILEC is called upon to perform between
16 Figures 3 and 4. In both of these cases, the ILEC transports the originating call from its
17 Pontiac customer to the CLEC POI in Bloomington; *the location where the CLEC ultimately*
18 *delivers the call has no effect whatsoever upon ILEC's work or its costs.*





1 Q. You have suggested that the only impact upon the ILEC arising out of Global NAPs'
2 decision as to the point of delivery of a given call lies in the possibility that the ILEC might
3 sustain a competitive revenue loss. Please elaborate on this point.

4
5 A. Suppose that, under the Verizon-Illinois tariff, a toll charge may apply for calls beyond a
6 certain distance or between non-contiguous exchanges, whereas a CLEC, in an effort to
7 differentiate its service from that of the ILEC and also to offer potential customers some
8 additional service features that are not being offered by the ILEC, treats some of these calls
9 as "local" and thus imposes no specific charge for the call. If, as a result of the CLEC's
10 offering, some of the ILEC's customers are persuaded to switch over to the CLEC's service,
11 the ILEC will sustain a loss of both local and toll revenue. *Such a loss of business is a*
12 *direct and inescapable outcome of competition:* Verizon-Illinois can either respond by
13 reducing or eliminating its own (toll) charges for these calls (thereby sustaining some
14 revenue loss), or risk losing customers to the less expensive CLEC service (thereby also
15 sustaining some revenue loss). The issue here is entirely one of *pricing and competitive*
16 *response*, not one of policy. In many cases, however, even that potential loss of revenue can
17 be overcome if Verizon-Illinois were to adopt more competitively rational pricing metrics.
18 And of course, if Verizon-Illinois must adjust its pricing to meet the lower prices of a
19 CLEC's competing service, consumers will benefit from that competition.

20
21 Q. You stated that in some cases Verizon-Illinois may sustain a loss of toll revenue. Why
22 would that not arise in *all* cases where the CLEC provides "free" service over a route for
23 which the incumbent imposes a charge?

24

1 A. This is because in many cases where the incumbent imposes a toll charge, its customers do
2 not use the service as much or even at all. For example, as we have previously discussed,
3 many customers reach their Internet Service Provider (“ISP”) by dialing a number rated in
4 the customer’s home community that the LEC (Verizon-Illinois or a CLEC) ultimately
5 delivers to the ISP at a distant point. In the examples we were discussing earlier and that are
6 illustrated in Figures 1 through 4, suppose that the ISP’s end-user customer takes local
7 telephone service from Verizon-Illinois in Pontiac, and that the call is handed off to a
8 CLEC, which then delivers the call to an ISP in Bloomington. One might argue that this
9 arrangement deprives Verizon-Illinois of the toll revenue it would otherwise have received
10 were this virtual FX arrangement not in place. In reality, the Pontiac customer would have
11 been unlikely to have called the Bloomington ISP on a toll call basis in the first place, and
12 would instead have selected a different ISP with a Pontiac presence; chosen another (non-
13 dial up) method to access the Internet; or simply not used the Internet at all. In any case,
14 Verizon-Illinois would not have received any toll (or expanded “local”) revenue. Hence, in
15 this circumstance, the only “revenue loss” to Verizon-Illinois is a theoretical one based upon
16 the “what might have been” rather than the “what actually was.”

17
18 **While attempting to shut down CLEC competition in the market for dial-up ISP access**
19 **services by prohibiting CLEC use of virtual NXX codes, Verizon-Illinois has, in some of its**
20 **operating territories, itself created a single “500” number statewide local calling**
21 **mechanism for use by its own ISP affiliate, Verizon-Illinois Online, under an arrangement**
22 **that is not, as a practical matter, available to CLECs.**
23

24 Q. Mr. Lundquist, you have described how Verizon-Illinois opposes Global NAPs’ proposal to
25 have the flexibility to make non-geographic assignments of NXX codes, that would permit
26 Global NAPs to offer services that could be used by ISPs to afford Illinois consumers with

1 toll-free dial-up access to the Internet over a wide geographic area. Do any of the Verizon
2 operating companies offer a similar wide area toll-free dial-up access service that could be
3 considered as competing with the type of “VNXX”-type service that Global NAPs wants to
4 be able to provide?

5
6 A. Yes, indeed they do. I have investigated Verizon’s tariffs and website, and determined that
7 many of the Verizon operating companies offer a service to ISPs that provides toll-free dial-
8 up access over a wide area, that would compete with the “VNXX”-type services that Global
9 NAPs seeks the ability to provide in Illinois.

10
11 On Verizon’s website, the intrastate version of this service is referred to as Primary Rate
12 Interface Single Number Service (“PRI SNS”), while it is called “Enhanced ISDN PRI Hub
13 Service” in at least one of the Verizon operating company intrastate tariffs.⁴⁶ Verizon also
14 has a parallel interstate tariff for this service.⁴⁷ As described on the Verizon website (see
15 Attachment 4), this service permits an ISP to select a single telephone number, either a 500-
16 699 number assigned by Verizon, or a 555- number obtained from NANPA (the North
17 American Numbering Plan Administration), that end users can dial from anywhere in the
18 LATA and access the ISP as if it were a local call, *i.e.*, without incurring any toll charges.
19 Moreover, the ISP can adopt the same 500- or 555- number in any or all of the LATAs in

46. See Attachment 4 to my testimony for Verizon’s webpage describing PRI SNS; see Attachment 5 for Verizon New York’s tariff for Enhanced ISDN PRI Hub Service in New York.

47. See Verizon Telephone Companies Tariff FCC No. 1 (Access), Section 16.5 (Internet Protocol Routing Service), Original Page 16-55, Effective April 28, 2001 (and following pages).

1 which Verizon provides this service, so that the ISP could advertise to its end users a single
2 dial-up number for that entire region.

3
4 While it does not appear that Verizon provides this service in Illinois to date, it is widely
5 available in the former Bell Atlantic footprint, and Verizon's website emphasizes that
6 Verizon can "transition" ISPs that are currently served by CLECs onto its "500" number
7 service. Clearly, Verizon-Illinois' position against flexible NXX code assignments amounts
8 to an attempt to shut out potential competitors such as Global NAPs from serving the market
9 for wide area dial-up access to ISPs.

10
11 Q. If Verizon decided to offer "500" number service in Illinois, would this Commission be able
12 to ensure that the service was not offered in a manner that disadvantaged competitors such
13 as GNAPs?

14
15 A. Apparently not. Because Verizon provides "500" number service via a federal-jurisdiction
16 interstate tariff as well as through intrastate tariffs, it could offer the service to *Verizon*
17 *Online* and non-affiliated ISPs in Illinois without seeking this Commission's approval. It is
18 my understanding that this situation is occurring in New Hampshire, where Verizon is
19 providing "500" number service through its interstate tariff, despite a withdrawal of the
20 parallel intrastate tariff in New Hampshire while the New Hampshire Public Utilities
21 Commission (PUC) is formulating its policy relative to VNXX services.⁴⁸

48. New Hampshire PUC, Docket Nos. DT 00-54 and DT 00-223, April 15, 2002 Hearings Transcript at 19.

1 Q. Isn't it possible for CLECs such as Global NAPs to resell Verizon's "500" number service
2 and thereby compete for that ISP business?

3
4 A. No, not as a practical matter. While a CLEC such as Global NAPs theoretically could resell
5 Verizon's "500" number service (or develop its own directly), as a practical matter it is
6 extremely unlikely that any rational ISP would actually order such service from a CLEC.
7 The problem is that the "500" number arrangement has one crucial drawback when
8 employed by any carrier other than an ILEC: the calling party dialing the "500" number
9 must also be served *by the same local carrier as the "500" number subscriber, i.e., the ISP*
10 *(see Attachment 4).*⁴⁹ Inasmuch as no single CLEC in Illinois currently serves more than a
11 tiny fraction of the total access line market, CLEC-provided "500" numbers would be
12 *inaccessible* from all but an insignificant fraction of the potential ISP customer base.
13 Therefore, ISPs would hardly find a "500" number service arrangement attractive if it were
14 offered from anyone other than the ILEC.

15
16 Consequently, the only practical means by which Global NAPs or other CLECs could
17 compete with Verizon for ISP business is through the use of virtual NXX codes, which can
18 be dialed from *any* telephone, served by *any* local carrier. If CLECs are denied the ability to
19 utilize virtual NXX codes as a means for competing in this market, the dial-up Internet
20 access market could quickly be conceded to, and would be monopolized by, Verizon.

49. Counsel for Verizon-New Hampshire has also stated that the interstate version of "500" number service, Internet Protocol Routing Service, "only accepts calls from Verizon customers. It does not accept calls from CLECs or independents." New Hampshire PUC, Docket Nos. DT 00-54 and DT 00-223, April 15, 2002 Hearings Transcript at 19.

1 Q. Aside from the obvious adverse impact upon CLEC competition, are there any other
2 implications of allowing Verizon to acquire a *de facto* monopoly of the market for dial-up
3 ISP access through its provision of these “500” numbers?
4

5 A. Indeed there are. Because the Verizon “500” numbers can only be dialed from *Verizon*
6 telephones, Verizon would be in the position of creating a *de facto* tying arrangement
7 between its regulated local exchange service and its nonregulated ISP, *Verizon Online*. In
8 fact, that appears to exist today, because *Verizon Online* uses a single 500-number (500-699-
9 9900) arrangement obtained from Verizon in thirteen states, but only Verizon local
10 exchange service customers can dial that telephone number on a toll-free basis (see
11 Attachment 6 to my testimony, which is a *Verizon Online*’s webpage describing its
12 “Standard Dial-Up Number”).
13

14 Indeed, if other ISPs who currently utilize CLEC services were forced to migrate to
15 Verizon because those CLECs would no longer be able to offer virtual NXX local call
16 access, then *end users* of dial-up ISP services would be forced to take their local phone
17 service from Verizon in order to obtain local call access to their ISP — whether that ISP is
18 *Verizon Online* or a non-affiliated provider that has subscribed to Verizon “500” number
19 service.
20

21 Q. To summarize your recommendation, is there any merit in Verizon-Illinois’ position that
22 Global NAPs should not be permitted to utilize virtual NXX assignments and rating
23 arrangements?
24

- 1 A. No, and for the Commission to accede to the Company's position on this issue would have
2 the effect of denying Global NAPs the opportunity to offer exactly the same types of
3 services that Verizon-Illinois itself can provide, and thereby to inappropriately protect
4 Verizon-Illinois from competition.

INTERCARRIER COMPENSATION ISSUES

From an economic and policy perspective, the appropriate intercarrier compensation for the termination and transport of ISP-bound local calls, as well as other forms of local traffic, is a symmetric rate based upon the ILEC's prevailing TELRIC cost level, which creates incentives for continual reductions in the costs of call termination services and harms neither ILECs nor end users.

Q. Mr. Lundquist, what rules currently govern the intercarrier compensation payments applicable to calls that are made to an Internet Services Provider?

A. While I am not offering a legal opinion, my understanding is that the FCC's *ISP Remand Order*⁵⁰ currently governs the intercarrier compensation payments that must be made when a locally-rated dial-up call to an Internet Services Provider (ISP) is handed off from the originating carrier to another carrier for completion. That order represents the FCC's second effort to impose a federally-mandated distinction between ISP-bound calls and all other locally-rated traffic that is subject to reciprocal compensation for intercarrier compensation purposes (so-called "Section 251(b)(5) traffic"). On May 3, 2002, the U.S. Court of Appeals for the District of Columbia Circuit issued a ruling that remanded the *ISP Remand Order* back to the FCC for further proceedings, but did not vacate the order.⁵¹ Unfortunately, the Court's action has the effect of indefinitely extending the uncertainty

50. *In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996 and Intercarrier Compensation for ISP-Bound Traffic*, CC Docket Nos. 96-98 and 99-68, *Order on Remand and Report and Order*, FCC 01-131 (rel. April 27, 2001) ("*ISP Remand Order*").

51. *WorldCom, Inc., v. FCC et al*, No. 01-1218 (D.C. Cir. May 3, 2002).

1 surrounding this issue until the FCC develops a rationale for its policies on ISP traffic that
2 can withstand judicial scrutiny or it amends those policies.

3
4 Q. Can you briefly summarize the history of the FCC's efforts in this area?

5
6 A. Yes. In February 1999, the FCC issued a *Declaratory Ruling* which held that such calls are
7 jurisdictionally mixed, but largely interstate; and that because ISP-bound calls were "non-
8 local interstate traffic" to which Section 251(b)(5) did not apply, state commissions were
9 free to determine whether or not reciprocal compensation payments should apply to that
10 traffic when arbitrating new interconnection agreements.⁵² However, in March 2000, the
11 D.C. Circuit Court of Appeals vacated and remanded the *Declaratory Ruling* "for want of
12 reasoned decision-making."⁵³ In April of last year, the FCC released the *ISP Remand*
13 *Order*, in which it concludes once again that ISP-bound calls are exempt from the reciprocal
14 compensation obligations of Section 251(b)(5), although it bases that conclusion on what
15 appears to be an entirely different legal analysis than that put forth in the *Declaratory*

52. *In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996 and Inter-carrier Compensation for ISP-Bound Traffic*, CC Docket Nos. 96-98 and 99-68, *Declaratory Ruling in CC Docket No. 96-98 and Notice of Proposed Rulemaking in CC Docket No. 99-68*, FCC 99-38 (rel. February 26, 1999) ("*Declaratory Ruling*"), at paras. 18-20 and 26.

53. *Bell Atl. Tel. Cos. V. FCC*, 206 F.3d 1 (D.C. Cir. 2000) ("*Bell Atlantic*"). Specifically, the Court found that the FCC had applied an "end-to-end analysis" that had been formerly used to determine calls' jurisdictional status, without explaining why that analysis was relevant to evaluating whether ISP-bound calls fit within the definition of Section 251(b)(5) traffic. *Id.* at 17.

1 *Ruling*.⁵⁴ In a parallel action, the FCC also issued a *Notice of Proposed Rulemaking* to
2 consider more permanent intercarrier compensation arrangements for ISP-bound traffic (as
3 well as other types of calls).⁵⁵

4
5 Q. What are the particular rules established by the *ISP Remand Order*?

6
7 A. The *ISP Remand Order* establishes specific rates and terms for intercarrier compensation for
8 ISP-bound traffic on an interim basis, including the following provisions:

- 9
10 • For six months following the effective date of that order, intercarrier compensation for
11 ISP-bound traffic was to be capped at \$0.0015 per minute of use (MOU); thereafter, the
12 compensation rate would fall to \$0.0010 / MOU for the next eighteen months, and
13 thence to \$0.0007 / MOU thereafter pending further FCC action;⁵⁶
14
15 • A LEC's total compensation for termination of ISP-bound traffic is limited in each of
16 the years 2001-2003 to its historical levels, plus a "growth factor" ranging from zero to
17 ten percent;⁵⁷ and
18

54. See *ISP Remand Order* at paras. 31-47 (finding that ISP-bound traffic falls within the categories enumerated by Section 251(g), which are exempted from the reciprocal compensation requirements of Section 251(b)(5)).

55. *Inter-carrier Compensation NPRM*.

56. *ISP Remand Order*, at para. 78.

57. *Id.*, at para. 78. The specific formulas to be applied are given therein.

- A rebuttable presumption is applied that traffic out of balance by more than a 3:1 ratio is ISP-bound terminating traffic to which the ISP compensation rates and limits will apply.⁵⁸

Because the FCC was concerned about the “superior bargaining power of incumbent LECs” relative to CLECs seeking interconnection, it has conditioned the application of its intercarrier compensation rules for ISP-bound traffic to the ILEC’s acceptance of the same rules for all forms of traffic subject to Section 251(b)(5), including local traffic exchanged with CMRS providers.⁵⁹ The FCC allows ILECs to make this election on a state-by-state basis.⁶⁰ Finally, where carriers had not been exchanging traffic pursuant to an interconnection order at the time of the *ISP Remand Order*, “carriers shall exchange ISP-bound traffic on a bill-and-keep basis during the interim period.”⁶¹

Q. Notwithstanding the applicability of the rules established by the *ISP Remand Order* to the instant case, does the proposal by Verizon-Illinois to utilize bill-and-keep for ISP-bound traffic that would otherwise be locally rated represent a reasonable form of intercarrier compensation from an economic and policy standpoint?

58. *Id.*, at para. 79.

59. *Id.* at para. 89.

60. *Id.*, at footnote 179.

61. *ISP Remand Order*, at para. 81

1 A. No, it does not. As a general matter, the most appropriate form of intercarrier compensation
2 for the termination and transport of ISP-bound local calls, as well as other forms of local
3 traffic, continues to be a symmetric rate based upon the ILEC's prevailing TELRIC cost
4 level, which creates incentives for continual reductions in the costs of call termination
5 services and harms neither ILECs nor end users. These incentives and the positive market
6 developments they engender were expressly recognized by the FCC in 1996, when it
7 designed the reciprocal compensation rules that continue to be applied on a default basis to
8 local telecommunications traffic subject to Section 251(b)(5).⁶² Despite the fact that the
9 FCC recognized the limited applicability of bill-and-keep at that time, and that bill-and-keep
10 was strenuously opposed by several of the ILECs, the FCC has seized upon mandatory bill-
11 and-keep as a "solution" to the problem that it believes has been created by the rapid growth
12 in providers of specialized call termination services, including but not limited to termination
13 of ISP-bound calls. However, a thorough analysis of the economic and policy foundations
14 to intercarrier compensation, as applied to ISP-bound calls and other telecommunications
15 traffic, leads to the conclusion that mandatory bill-and-keep would fail to be an efficient or
16 equitable form of intercarrier compensation, and in fact would seriously disadvantage
17 CLECs in favor of ILECs in a manner contrary to the *Act*.

18
19 Q. Have you undertaken such an analysis?

20
21 A. Yes. In August of 2001, ETI's President, Dr. Lee L. Selwyn, and I prepared a report that
22 examines in detail the economic and policy issues associated with intercarrier compensation

62. See the FCC's *Local Competition Order*.

1 arrangements for interconnecting telecommunications carriers entitled *Efficient Intercarrier*
2 *Compensation Mechanisms for the Emerging Competitive Environment*, attached hereto as
3 Attachment 4.⁶³

4
5 Q. Can you summarize the principal findings contained in that report?

6
7 A. Yes. One focus of our report was to respond to two papers published by the FCC's Office
8 of Plans and Policy (OPP) which the FCC cited in the *Intercarrier Compensation NPRM* as
9 support for adopting a mandatory bill-and-keep framework for intercarrier compensation. In
10 brief, our report identifies four main flaws in those papers:

11
12 (1) The OPP papers fail to recognize the intrinsic linkage between the method adopted for
13 intercarrier compensation and the retail prices paid by end users, which causes their
14 analyses to be fundamentally incomplete, and fail to appreciate the enormous
15 disruptions and formidable regulatory burdens that would arise in the attempt to
16 transition to their proposed "bill-and-keep" arrangement.

17
18 (2) The papers make certain assumptions concerning the allocation of the benefits and costs
19 of a call between the calling and called parties, assumptions that are unsupported by any
20 factual evidence and that are most likely wrong as an empirical matter.

21

63. This report was originally submitted in the FCC's Inter-carrier Compensation rulemaking, CC Docket No. 01-92, as an attachment to the August 21, 2001 Comments of Focal Communications Corp., Pac-West Telecomm, Inc., RCN Telecom Services, Inc. and US LEC Corp.

1 (3) The papers inconsistently combine theoretical and pragmatic considerations to support
2 their concrete proposals for how interconnection should be priced.

3
4 (4) The papers unduly defer to existing architectures and practices of ILECs, in effect
5 requiring entrants to accept what amounts to a “take-it-or-leave-it” set of inter-
6 connection conditions, such as existing ILEC local calling area definitions and the
7 premise that inward and outward traffic that is out-of-balance is categorically to be
8 discouraged.

9
10 Neither of the OPP papers provides a sound economic or policy basis for regulators to
11 impose “bill-and-keep” arrangements as the preferred solution for intercarrier compensation
12 on ISP-bound calls and other locally-rated traffic. The other principal findings of our report
13 are as follows:

- 14
- 15 • The perceived “problems” with the existing intercarrier compensation mechanism of
16 explicit reciprocal compensation payments — traffic imbalances and the growth in
17 payments by ILECs to CLECs for termination of ISP-bound calls — are properly
18 viewed as the outcome of exactly the type of competition that the *Telecommunications*
19 *Act* and the FCC’s *Local Competition Order* was intended to promote, and do not
20 represent market “failures” that must be remedied by further regulatory intervention.
 - 21
 - 22 • Despite the recent revival of interest in a bill-and-keep model for intercarrier
23 compensation — which was flatly opposed by most ILECs when first considered in
24 post-*Act* arbitrations and regulatory proceedings to establish reciprocal compensation

1 rates — the economics of bill-and-keep have not changed from the period when the
2 FCC previously concluded that it was reasonable to apply *only* when carriers exchanged
3 traffic that was roughly balanced so that *mutual* compensation would take place.
4

- 5 • When evaluated using appropriate criteria, including economic efficiency, competitive
6 neutrality, and impacts upon end users, neither bill-and-keep nor other options that have
7 been considered for application to ISP-bound traffic, including traffic imbalance
8 thresholds and access charge treatment, would provide a satisfactory alternative to the
9 existing form of reciprocal compensation arrangements.
10

11 Q. What are your recommendations at this time to the Commission concerning the application
12 of intercarrier compensation to locally-rated traffic exchanged between Global NAPs and
13 Verizon-Illinois?
14

15 A. In the event that the Commission determines at some future point that the specific
16 intercarrier compensation rules set forth in the FCC's *ISP Remand Order* do not apply to
17 locally-rated traffic exchanged between Global NAPs and Verizon-Illinois (*e.g.*, as a result
18 of an appellate court ruling to reverse, vacate, or stay the *ISP Remand Order*), the
19 Commission should apply a symmetric, TELRIC-based reciprocal compensation rate
20 consistent with the findings and supporting analysis presented in our report.
21

22 Q. Does this conclude your direct testimony at this time?
23

24 A. Yes, it does.